



I.R. - 13      8 1/2 x 11



UMA INORNATA



# Uma inornata Testis Histology

<u>Figure No.</u>	<u>Stage</u>	<u>Lizard No.</u>	<u>Capture Date</u>	<u>Magnification</u>
6	1(normal)	165	10/20/59	620
7	1(abnormal)	308	3/16/61	400
8	3	177	3/10/60	620
9	4	169	3/10/60	620
10	5	310	3/16/61	620
11	6	195	4/28/60	620
12	7	223	6/12/60	620
13	7(late)	385	9/10/61	620
14	8	98	6/12/59	620
15	immature	102	6/12/59	620
16	non-breeding epididymis	339	8/15/60	635
17	portion of breeding epididymis	195	4/28/60	570
18	breeding epididymis	223	6/12/60	400





U. inornata - Spermatogenic Condition

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1												
2												
3			3			1						
4			3	3				1				
5			4	5				1				
6			1	16	29	14	5	6				
7						4	1	5	4			
8					1	3	4	15	13	2		
9	1	2	6					1	2	5		
10												
N	1	2	17	24	30	22	18	29	19	7		

90

1												
2												
3			18			4						
4			18	12				3				
5			24	21				3				
6			6	67	97	64	50	21				
7						18	10	17	21			
8					3	14	40	52	68	29		
9	100	100	36					3	10	71		





Uma inornata Adult ♀♀ (70<sup>+</sup>mm. s-v) With Enlarged Eggs

No.	Left ovary	Right ovary
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

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# Uma inornata Testis Volumes (cmm - v)

1955

## Left Testis

Aug	Sept	Oct
6	1	3
	1	15
	6	6
		32
		23
		17

Total Vol.	6	7	75
Mean	6	3	16
Range	-	1-6	3-32

## Right Testis

11	-	3
	2	16
	3	11
		32
		21
		15

Total Vol.	11	7	78
Mean	11	2	16
Range	-	2-3	3-32

No. Lizards	1	3	6
-------------	---	---	---

N = 10

Largest ♂ =

Smallest ♂ =





Uma inornata Testis Volumes (80<sup>+</sup>mm SV)

1959

Left Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>pt</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
6	33	81	57	132	153	5	26	4			
			18	99	3	61	3	6			
			21	121	5	1	3	13			
			8	13			5	1			
			18	11			5				
			18	212			5				
			6				5				

No. Lizards	1	1	1	7	6	3	3	7	4	1	
Total Vol.	6	33	81	326	164	161	18	61	4		
Mean	6	33	81	47	126	54	26	1	6		
Range	-	-	-	6-18	18-212	3-153	3-61	3-26	1-13		

Right Testis

4	36	63	84	143	157	5	34	1	5
			84	121	3	57	2	13	
			21	134	5	16	4	9	
			7	150			9	3	
			78	11			5		
			81	118			7		
			6				11		

Total Vol.	4	36	63	361	737	165	76	73	26		
Mean	4	36	63	52	123	55	26	11	6		
Range	-	-	-	6-84	11-157	3-157	3-57	3-34	1-13		
No. Lizards	1	1	1	7	6	3	3	7	4	1	

N = 34



Uma inornata Left Testis Volumes (50+mm SV)

1960

Left Testis

<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
		49	195	184	128	2	8	7	25		
		31	78	131	114	26	8	7			
		57	61	247	2	3	4	11			
		24	77	150	9		1	1			
		141	241	157	3		111	7			
			410	263	121		15	12			
				158	52		16	2			
				128	5		5				
				255			8				
				141			2				
							8				
							16				
							4				
							1				
							61				

Total Vol.	—	—	304	1072	1825	494	31	278	49	25	—	—
Mean	—	—	61	179	182	62	10	20	7	25	—	—
Range	—	—	24-141	69-410	128-263	2-174	2-26	1-111	1-12	—	—	—
No. Lizards	—	—	5	6	10	8	3	15	7	1	—	—

N = 55





Uma inornata Testis Volumes (20+mm = V)

1960

Right Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sep</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
		41	198	131	90	3	6	6	18		
		32	78	97	178	16	10	5			
		50	65	251	2	3	3	12			
		16	73	149	22		1	1			
		161	222	165	2		107	6			
			388	265	107		50	12			
				206	47		10	1			
				102	3		5				
				236			7				
				143			2				
							7				
							13				
							6				
							1				
							63				

Total Vol.	—	—	300	1024	1747	448	22	295	43	18	—	—
Mean	—	—	60	171	175	56	7	20	6	18	—	—
Range	—	—	16-161	65-388	91-265	2-178	3-16	1-107	1-12	—	—	—
No. Lizards	—	—	5	6	10	8	3	15	7	1	—	—

N = 55



Uma inornata Testis Volume (50+mm - V)

1961

Left Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
69	30	161	308	176	82	82	15	4			
	31	41	121	169	263	26	11	3			
	42	120	235	15	105	89	11	16			
	45	161	208			2	61	0	6		
	38	86	163			2	14	9			
	41	84	131								
	24	137	198								
	61	42	145								
	35	168	210								
Total Vol.	69	359	1008	1725	360	454	212	46	21		
Mean	69	40	112	112	120	11	54	1	7		
Range		24-61	4-168	121-308	15-176	2-263	14-89	0-15	3-16		
No. Lizards	1	9	9	9	3	5	5	5	4		

N = 50

May, 1961: Palm Spring Pincrow (5 lizards) - Total Vol. = 1035 mm<sup>3</sup>;  $\bar{X}$  = 207 mm<sup>3</sup>  
 1000 Palm (4 lizards) - " " = 670 "  $\bar{X}$  = 172 "  
 (17% difference between these animals)





Uma inornata Testis Volume (mm<sup>3</sup> - V)

1961

Right Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	69	27	141	303	185	70	94	14	3		
		32	41	79	181	203	14	13	3		
		44	89	263	14	104	77	7	12		
		47	131	181		2	50	0	7		
		33	64	128		1	16	8			
		52	61	128							
		24	112	171							
		73	35	157							
		42	141	211							

Total Vol.	—	69	314	827	1661	350	350	273	44	25	—	—
Mean	—	69	42	12	185	127	16	55	7	6	—	—
Range	—	—	24-13	35-141	19-303	14-185	1-203	14-77	0-14	3-12	—	—
No. Lizards	—	1	4	4	4	3	5	5	5	4	—	—

N = 50



N=40

Uma inornata Testis Volume (50+mm S-V)

1962

Left Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	78	212	198	144	1	105	23				
	66	244	255	105	13	120	52				
	198	131	324	71	17	61	22				
			18	15	8	13	1				
			325	36	61	55					
			188	161	123	3					
			137	141		1					
				157							
				115							
				60							

Total Vol.	-	-	342	653	1510	1017	223	447	106	-	-
Mean	-	-	114	218	216	102	37	64	26	-	-
Range	-	-	66-198	131-272	15-328	15-161	1-123	1-120	1-52	-	-

Right Testis

65	216	203	141	1	105	19
68	205	286	104	14	117	53
193	134	314	84	20	71	25
		15	18	5	56	1
			42	55	51	
		147	161	124	3	
		121	113		3	
			141			
			111			
			62			

Total Vol.	-	-	326	618	1140	1046	222	444	106	-	-
Mean	-	-	108	206	190	105	37	63	26	-	-
Range	-	-	65-193	134-216	15-314	15-113	1-124	2-117	1-53	-	-
No. Lizards	-	-	3	3	7	10	6	7	4	-	-





# Total Uma inornata Testis Volumes (80+mm SV)

1958 - 1962

## Left Testis

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
Total Vol.	6	102	1086	3059	5614	2032	186	1084	233	154	—	—
Mean	6	51	60	122	182	85	46	31	10	13	—	—
Range	—	33-69	24-198	6-410	11-328	2-176	1-263	1-120	0-52	3-25	—	—

## Right Testis

Total Vol.	4	105	1063	2830	5285	2039	102	1096	246	146	—	—
Mean	4	52	59	113	165	85	41	31	10	12	—	—
Range	—	36-69	16-193	6-388	11-314	2-185	1-203	1-119	0-53	3-32	—	—
No. lizards	1	2	18	25	32	24	17	35	23	12	—	—

N = 189



Uma inornata Left Testis Volume (May, 1959-1962)

(80+mm. S-V)

<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
182	33124	139	19321
99	9801	410	168100
121	14641		
130	16900		
11	121		
212	44944		
184	33856		
137	18769		
249	62001		
150	22500		
157	24649		
263	69169		
158	24964		
128	16384		
258	66564		
141	19881		
308	94864		
121	14641		
235	55225		
208	43264		
163	26569		
137	18769		
198	39204		
145	21025		
210	44100		
198	39204		
255	65025		
324	104976		
78	6084		
328	107584		
188	35344		

$$\Sigma X = 5814$$

$$\Sigma X^2 = 1,213,467$$

$$N = 32$$

$$\bar{X} = 182$$

$$\bar{X}^2 = 33124$$

$$\text{Range} = 11 - 410 \text{ mm}^3$$

$$s^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$s^2 = \frac{1213467 - 32(33124)}{31}$$

$$s^2 = \frac{1213467 - 1059968}{31}$$

$$s^2 = \frac{153499}{31}$$

$$s^2 =$$

$$S.E. = \sqrt{\frac{s^2}{N}}$$

$$S.E. = \sqrt{\frac{4952}{32}}$$

$$S.E. = \sqrt{155}$$

$$S.E. = 12.4$$





# Uma inornata Right Testis Volume (May, 1959-1962)

(80+ mm. S-U)

<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
143	20449	388	150544
121	14641		
134	17956		
150	22500		
11	121		
178	31684		
131	17161		
97	9409		
251	63001		
149	22201		
165	27225		
265	70225		
208	43264		
102	10404		
236	55696		
143	20449		
303	91809		
99	9801		
263	69169		
181	32761		
128	16384		
128	16384		
191	36481		
151	22801		
217	47089		
203	41209		
280	78400		
314	98596		
75	5625		
147	21609		
121	14641		

$$\Sigma X = 5285$$

$$\Sigma X^2 = 1,049,145$$

$$N = 31$$

$$\bar{X} = 165$$

$$\bar{X}^2 = 27225$$

$$\text{Range} = 11-388 \text{ mm}^3$$

$$S^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$S^2 = \frac{1,049,145 - 31(27225)}{30}$$

$$S^2 = \frac{1,049,145 - 843,975}{30}$$

$$S^2 = \frac{205,170}{30} = 6839$$

$$S.E. = \sqrt{\frac{S^2}{N}}$$

$$S.E. = \sqrt{\frac{6839}{31}}$$

$$S.E. = \sqrt{220}$$

$$S.E. = 15$$



Uma inornata Testis Volumes Combined (May, 1959-1962)  
(80+mm. S-V)

	<u>Left</u>	<u>Right</u>	<u>Total</u>
$\Sigma X$	5814	5285	11099
$\Sigma X^2$	1,213,467	1,049,145	2,262,612
$N$	32	31	63
$\bar{X}$	182	165	176
$\bar{X}^2$	33124	27225	30976

Range —: 11-410mm<sup>3</sup>    11-388    11-410

$$s^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$s^2 = \frac{2,262,612 - 63(30976)}{62}$$

$$s^2 = \frac{2,262,612 - 1,951,488}{62}$$

$$s^2 = \frac{311124}{62}$$

$$s^2 = 5018$$

$$S.E. = \sqrt{\frac{s^2}{N}}$$

$$S.E. = \sqrt{\frac{5018}{63}}$$

$$S.E. = \sqrt{80}$$

$$S.E. = 9$$



N=33

Uma inornata Testis Volumes (mm<sup>3</sup>)

1951

Left Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
0.3		0.1	1.0	0.4	0.3	0.5	0.5	0.1	0.3	4.4	
		0.1	0.8	0.6	0.4	0.5	0.4	1.0			
				0.2	0.5	0.1	0.5				
				0.4	0.5	0.4	0.5				
				1.1	0.3		0.2				
							0.4				
							5.1				
							0.5				
							0.1				
							0.4				

Total Vol.	0.3	-	1.4	1.8	3.0	2.0	2.1	9.9	1.1	0.3	4.4	-
Mean	0.3	-	0.1	0.4	0.6	0.4	0.5	1.0	0.4	0.3	4.4	-
Range	-	-	0.1	0.5-1.0	0.2-1.2	0.3-0.5	0.4-0.1	0.2-5.8	0.1-1.0	-	-	-

Right Testis

0.3		0.7	2.3	0.5	0.4	0.5	0.4	0.1	0.4	4.3	
		0.7	0.8	0.7	0.1	0.5	0.2	0.1			
				0.2	0.3	1.0	0.5				
				0.5	0.5	0.4	0.5				
				1.4	0.3		0.5				
							0.5				
							6.4				
							0.3				
							0.1				
							0.5				

Total Volume	0.3	-	1.4	3.1	3.5	2.2	2.4	10.5	1.4	0.4	4.3	-
Mean	0.3	-	0.7	1.5	0.7	0.4	0.6	1.0	0.1	0.4	4.3	-
Range	-	-	0.7	0.8-2.3	0.2-1.4	0.3-0.1	0.4-1.0	0.2-6.4	0.1	-	-	-
No. Lizards	1	-	2	2	5	5	4	10	2	1	1	-





Uma inornata Testis Volumes (<80 mm - V)

1960

Left Testis

Jan Feb Mar Apr May June July Aug Sep Oct Nov Dec

9.2 0.8 — 2.2 4.6

5.4 85.0 (78mm)

1.4 75.0 (78mm)

Total Vol.		16.0	150.5	—	2.2	4.6	—	—	—	—	—
Mean		5.3	67.2	—	2.2	4.6	—	—	—	—	—
Range	—	—	1.4-1.2	0.8-75	—	—	—	—	—	—	—

Right Testis

7.6 0.4 — 1.5 3.2

5.1 75.4

0.9 66.3

Total Vol.	—	—	13.6	145.8	—	1.5	3.2				
Mean	—	—	4.3	48.5	—	1.5	3.2				
Range	—	—	0.9-7.6	0.8-78	—	—	—	—	—	—	—
No. Lizards	—	—	3	3	—	1	1	—	—	—	—

N = 8

1962

Left Testis

0.8

Right Testis

0.8

N = 1

(

(

(

Uma inornata  
Differences in Testes Volumes

(80+ mm S-V)

Left Testis Larger

|||||  
 |||||

(73)

(36%)

Right Testis Larger

|||||  
 |||||

(63)

(33%)

Testes Even

|||||  
 |||||

(55)

(29%)

N = 191

(< 80 mm S-V)

|||

(4)

(1)

|||||

(38)

N = 43



Potentially Breeding Uma inornata ♂♂ (80+mm, 3-V)

①

(Smallest ♂ = 78mm)  
(Largest ♂ = 128mm)

Total, 110 - 1101

Date	# ♂	N ♂	Total	% ♂
Aug. '58	0	1	1	0
Sept.	0	3	3	0
Oct.	0	6	6	0
Jan. '59	0	1	1	0
Feb.	0	1	1	0
Mar.	0	1	1	0
Apr.	2	5	7	27
May	5	1	6	83
June	1	2	3	33
July	1	2	3	33
Aug.	1	6	7	14
Sept.	0	7	7	0
Oct.	0	1	1	0
Mar. '61	0	5	5	0
Apr.	1	0	1	100
May	10	0	10	100
June	4	4	8	50
July	1	2	3	33
Aug.	2	12	14	14
Sept.	0	7	7	0
Oct.	0	1	1	0
Feb. '61	0	1	1	0
Mar.	0	4	4	0
Apr.	2	7	9	22
May	8	1	9	89
June	2	1	3	67
July	3	2	5	60
Aug.	3	2	5	60
Sept.	0	5	5	0
Oct.	0	4	4	0

Month	# ♂	N ♂	Total	% ♂
Jan.	0	1	1	0
Feb.	0	2	2	0
Mar.	0	15	15	0
Apr.	13	9	22	59
May	23	2	25	92
June	7	7	14	50
July	4	7	11	36
Aug.	6	21	27	22
Sept.	0	17	17	0
Oct.	0	12	12	0
Total			146	



Potentially Breeding *Uma inornata* ♂♂ (50+mm = -V)

(2)

Total, 115♂ - 116♀

<u>Date</u>	<u># ♂</u>	<u>No ♀</u>	<u>Total</u>	<u>% ♂</u>
Mar '62	0	2	3	0
Apr	3	0	3	100
May	7	0	7	100
June	5	5	10	50
July	2	4	6	33
Aug	5	2	7	70
Sept	0	4	4	0
Apr. '64	0	1	1	0

<u>Month</u>	<u># ♂</u>	<u>No ♀</u>	<u>Total</u>	<u>% ♂</u>
Jan	0	1	1	-
Feb	0	2	2	0
Mar	0	18	18	0
Apr	16	9	25	64
May	30	2	32	94
June	12	12	24	50
July	6	11	17	35
Aug	11	23	34	32
Sept	0	23	23	0
Oct	0	12	12	0
Total			188	





Uma inornata Immature (< 80 mm S-V)

Left testis anterior

Right testis anterior

Testes even



Uma inornata Adults (80+ mm S-L)

(15)

Left testis anterior

(16)

Right testis anterior

|||||

(17)

Testes even



Uma inornata Adult ♂ (80+mm S-L)

B

B1

B2

B3

Jan  
Feb  
Mar  
Apr  
May  
Jun  
Jul  
Aug  
Sep  
Oct  
Nov  
Dec

I

II

III

III

III

II

II

I

I



Uma inornata Immature ♂

B

B1

B2

B3

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec





U. sinuata

Enlarged left lobe of 2nd molar

1959	3/6	to	7/20
1960	3/22	to	8/15 [52.11.1960]
1961	2/15	to	3/10
1962	5/22	to	6/10

Highly convoluted epididymis (7)

1959	4/27	to	8/10
1960	2/20	to	9/16
1961	3/10	[ <sup>45.1</sup> 6.10.61 - 2/18]	to 2/18
1962	5/10	to	6/10

Small epididymis (5)

1959	4/29	to	5/14
1960	4/1	to	8/15
1961	4/9	to	7/10
1962	4/24	to	5/10

Too small to work (4)

1959	4/29	to	8/15
1960	4/14	to	3/11
1961	4/10	to	1/16
1962	4/24	to	5/10



Uma inornata ♀♀

Year      Ova Accumulate Yolk

1959

1960

1961

1962 Apr. 24, May 24, June 1, Jul 11, Aug 8

Ova Enlarge (> 5 mm dia.)

1959 May 21, June 12, Jul 28

1960 Apr. 14, May 20, Jul 23, Aug 11

1961 May 18, June 18, Jul 18, Aug 14, Sept. 16

1962 Apr. 24, May 24, June 1, Jul 11, Aug 8

Oviducts Convulsed

1959 June 12, Jul 28, Aug 11, Sept. 9, Oct. 1

1960 Mar. 10, Apr. 14, May 20, June 12, Jul 23, Aug 11, Sept. 10, Oct. 1

1961 Mar. 10, Apr. 1, May 18, June 12, Jul 18, Aug 14, Sept. 16

1962 Mar. 28, Apr. 24, May 24, June 1, Jul 11, Aug 8, Sept. 6

Eggs in Oviduct

1959 June 12

1960 June 12, July 23, Aug. 11

1961 June 18, Jul 18, Aug 14

1962 Apr. 24, June 1, Aug 8, Sept. 6

Corpora Lutea

1959 June 12

1960 June 12, Jul 23, Aug. 11, Sept 16(?)

1961 June 18, Jul 18, Aug. 14, Sept. 16(?)

1962 Apr. 24, June 1, Jul 11, Aug. 8, 6 Sept

Eggs in Oviduct and Enlarged Eggs in Ovary

2 ♀ with yellow eggs



# Reproduction in ♀♀ Uma inornata (70+mm, S-V)

Date	Total ♀♀	Ova Accumulate Yolk	Ova enlarge (>5mm dia.)	oviducts convoluted + Walls thickened	Eggs in oviduct		corpora lutea
					# ♀	# eggs	
Aug. '58	###1	(6)					11
Sept.	###111	(8)					
Oct.	###1	(6)					
Mar. '59	111	(3)					
Apr.	###1	(6)					
May	###1	(6)	I				
June	### ###	(10)	11		1	2	1
July	### ###1	(11)	1	###111			
Aug.	###1111	(9)		###			[1-?]
Sept.	111	(3)		11			[1-?]
Oct.	I	(1)		I			
Mar. 1960	###1	(6)		1111			
Apr.	###1	(6)	1111	111			
May	###11	(7)	###	1111	1	3	1
June	11	(2)		11	1	3	11
July	1111	(4)	I	1111	1	2	1
Aug.	### ###1111 ###1	(21)	11	### ###1111 I	1	2	[1-?] 1111
Sept.	### ###1111 111	(18)		### ###1111 11			[### ###1111?]
Oct.	I	(1)		I			
Mar. 1961	1111	(4)		1111			
Apr.	11	(2)		11			
May	###	(5)	111	11			
June	###	(5)	1111	###	1	3	11
July	###11	(7)	11	###11	11	2,2	11
Aug.	###	(5)	11	###	1	2	1
Sept.	###111	(8)	I	###111			[1-?] 1
Oct.	###1	(6)		111			



Reproduction in ♀♀ Uma inornata (70<sup>+</sup>mm, S-V) 2.

Date	Total ♀♀	Ova Accumulate Yolk	Ova enlarge (>5mm. dia.)	Oviducts convoluted + Walls thickened	Eggs in oviduct		Corpora lutea
					# ♀	# eggs	
Mar. 1962	11	(2)		I		3	I
Apr.	"	(2)					
May	I	(1)	I	I			
June	### I	(6)	I	###	III	2, 4, 3	III
July	### I	(6)	I	### I			[III-?]
Aug.	### ### I	(11)	III	### ### I	"	2, 2	III
Sept.	III	(3)		III	I	2	###-?] I[II-?]

Totals 207 33 16 39  
 Range 2-4  
 Mean 2.4

	<u>Total ♀♀</u>
Mar.	15
Apr.	16
May	19
June	23
July	28
Aug.	52
Sept.	40
Oct.	14
Total	207





Uma inornata  
EGGS IN OVIDUCT

LEFT

RIGHT

[illegible]



Uma inornata  
SIZE OF EGGS IN OVIDUCT

LEFT

RIGHT

LIZARD NO.

SIZE IN mm.

SIZE IN mm.

88 19.3 x 11.0 18.4 x 10.4

210 17.7 x 9.0 18.8 x 7.7

221 20.7 x 10.1

231 19.5 x 11.1

265 18.7 x 10.7

357 18.9 x 11.6

370 19.4 x 11.6

372 22.8 x 9.7

381 19.8 x 9.1

416 17.2 x 11.7 17.2 x 11.4

430 17.7 x 11.7

433 18.9 x 12.0 RUPTURED

440 16.5 x 12.0 16.3 x 11.7

458 20.0 x 10.0

464 18.6 x 10.6

473 18.5 x 9.6 17.8 x 10.7

20.1 x 8.3

18.3 x 10.1 20.5 x 11.1

21.2 x 10.8

18.7 x 10.3

18.5 x 13.9 19.6 x 12.0

19.8 x 11.6

21.1 x 10.0

20.0 x 10.4

20.8 x 11.8

18.1 x 12.3

18.8 x 11.4 18.7 x 11.6

18.2 x 12.0

19.3 x 12.8

20.8 x 10.0

$N = 21$

$\bar{X} = 18.7 \times 10.6 \text{ mm}$

Range = 16.3 x 7.7 mm - 22.8 x 12.0 mm

$N = 17$

$\bar{X} = 19.6 \times 11.2$

Range - 18.1 x 8.3 mm To 21.2 x 13.9 mm

$N = 38$

$\bar{X} = 19.1 \times 10.9 \text{ mm}$

Range = 16.3 x 7.7 mm To 22.8 x 13.9 mm



Uma inornata  
OVA WITH YOLK

LEFT OVARY

RIGHT OVARY

NUMBER OF OVA

1 ~~|||||~~

~~|||||~~

2 ~~|||||~~

~~|||||~~

3

1

4

5

6

7

8

9

10



Uma inornata Adult (70+ mm S-U)

No.	Left ovary	Right ovary
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		





Uma inornata Immature

No.	Left ovary	Right ovary
1		
2	≡	
3	≡	≡
4	≡	≡
5	≡	≡
6	≡	
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		



Uma inornata Adult ♀ (70+ mm S-V)

)	B	B1	B2	B3
Jan				
Feb				
Mar II				
Apr I				I
May		I		
Jun II		III	I	
Jul II		III		
Aug III		<del>III</del> III	I	
Sep		III		
Oct				
Nov				
Dec				
)				



Uma inornata  
FAT BODIES  
⑦

MONTH	ADULT		IMMATURE	
	♂ (80mm)	♀ (70mm.)	♂	♀
JANUARY				
FEBRUARY	2			
MARCH	23	15		
APRIL	31	11	I	
MAY	30	22	I	I
JUNE	27	21	II	II
JULY	22	2	I	
AUGUST	21	11	II	III
SEPTEMBER	26	11	I	I
OCTOBER	13	III		I
NOVEMBER				
DECEMBER				



1. Greatest difference between testis volumes, same animal.
2. Right testis always anterior to left in body.
3. 26/29 of animals, ~~left~~ right ovary anterior, 3/29, no ovary seen.
4. (Graph made for differences in testis volumes)
5. Time fat bodies present: ♂ -  
♀ -





UMA NOTATA

UMA NOTATA

Uma notata Testis Volume (80+mm - -V)

1956

Left Testis

	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>
	4	11	3	10
	69		41	
Total Vol.	73	11	44	10
Mean	36	11	22	10
Range	4-69	-	3-41	-
No. lizards	2	1	2	1

Right Testis

	3	18	3	12
	81		41	
Total Vol.	84	18	44	12
Mean	42	18	22	12
Range	3-81	-	3-41	-
No. lizards	2	1	2	1

$$IV = 6$$

Largest ♂ =  
Smallest ♂ =



Uma notata Testis Volume (80<sup>+</sup>mm S-V)

1954

Left Testis

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
			43	27	55	191	89	128	13	11	14	
			32	101	40	48	36	42	3			
			38	118	90	154	47	36	3			
				1		78		55	15			
				3				12	4			
								1				
								2				
Total Vol.	—	—	113	256	185	471	172	276	38	11	14	—
Mean	—	—	38	57	62	118	57	39	8	11	14	—
Range	—	—	32-43	1-118	40-90	48-191	36-89	1-128	2-15	—	—	—

Right Testis

			45	25	51	203	97	145	18	14	16	
			31	171	51	52	14	15	3			
			38	124	124	173	45	51	3			
				2		76		79	14			
				3				13	5			
								2				
								3				
Total Vol.	—	—	114	325	226	524	156	368	43	14	16	—
Mean	—	—	38	65	75	131	52	53	7	14	16	—
Range	—	—	31-45	2-171	51-124	52-203	14-97	2-145	3-18	—	—	—
No. lizards	—	—	3	5	3	4	3	7	5	1	1	—

N=32



# Uma notata Testis Volumes (cot mm - V)

1960

## Left Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
13	48	7	14	13	108	65	18	14			
18	58	3	236	102	3	22	13	7			
38	52	3	145	53	16	48	13	8			
16	30	13	111	146	18	8	13	4			
	30	89	246	111	120	11	7	16			
		109	137	60	12	63	2	7			
		137	111	63	57	53	10	5			
		28	169	111		39	3				
		101	76	12		1	13				
		32	246	33		18	2				
		42	18	133		53	4				
		145	68	102		33					
		198	171			57					
		158	76			85					
		26	105			15					
			134								
			116								
			153								
			117								
			115								
			141								

Total Vol.	—	85	218	1079	2935	769	554	111	18	61	—	—
Mean	—	21	44	73	140	81	19	47	4	4	—	—
Range	—	13-38	30-58	3-198	76-246	13-146	3-120	8-85	2-18	4-16	—	—
No. lizards	—	4	5	15	21	12	1	15	11	1	—	—

N=97





# Uma notata Testis Volume (50+mm - V)

1960

## Right Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
16	59	7	97	13	116	52	20	11			
22	57	3	222	107	3	35	18	11			
38	44	3	161	55	61	42	13	13			
16	34	4	122	131	77	13	10	4			
	38	67	242	134	107	17	9	21			
		94	134	71	76	146	3	7			
		134	104	61	63	30	10	5			
		50	237	77		45	4				
		108	91	50			10				
		26	251	30		87	1				
		38	101	118		55	6				
		121	118	101		42					
		205	193			63					
		143	72			45					
		24	111			15					
			157								
			105								
			128								
			118								
			162								
			158								

Total Vol.	—	92	232	1027	3084	974	551	174	124	12	—	—
Mean	—	23	46	68	147	61	77	52	9	10	—	—
Range	—	16-38	34-57	3-205	12-251	13-134	3-116	6-146	1-20	4-21	—	—
No. lizards	—	4	5	15	21	12	1	15	11	1	—	—

N = 97



Uma notata Titi Volume - (60+mm - V)

1961

Left Testis

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
	24	40	21	57	81	102	11	3	2			
	11	5	113	71	51	143	86	1	6			
		38	124	7	10	16	3	5	7			
			141	171	80	81	35	5	3			
			111	182	57	85	3	13	2			
			57	171	25	81	44	1	3			
			101	193	82	13			6			
			16	120	147	57			4			
			15	11	105	65			5			
			42	131	114	105			2			
				42	137	101			6			
				17	53	22			6			
				63	226	12			2			
				70	105	48						
						12						
						15						
Total Vol.	—	34	83	850	1379	1345	1339	193	36	59	—	—
Mean	—	17	28	85	98	100	19	32	6	4	—	—
Range	—	11-23	5-40	15-149	7-193	25-226	6-143	3-86	1-13	2-8	—	—
No. lizards	—	2	3	10	14	14	17	6	6	13	—	—

$$N = 85$$



Uma notata Testis Volume (85+ mm S-V)

1961

Right Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
25	43	124	101	11	17	25	2	2			
12	4	11	111	61	162	61	15	5			
	3	143	1	66	154	3	5	6			
		131	141	112	162	36	5	4			
		10	15	57	93	7	11	3			
		57	128	25	54	31	1	3			
		115	178	61	51						
		13	104	162	52			7			
		16	13	131	1			4			
		41	141	121	64			2			
			34	153	115			6			
			11	51	44			8			
			57	256	76			3			
			51	111	52						
					5						
					1						
					51						
Total Vol.	—	57	85	848	1291	1444	1426	176	39	61	—
Mean	—	18	28	85	92	103	84	29	6	5	—
Range	—	12-25	4-43	13-143	9-178	25-236	5-162	3-67	1-15	2-8	—
No. lizards	—	2	3	10	14	14	17	6	6	13	—

N = 85



Uma notata Testis Volume (mm V)

1162

Testis

Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
		55	105	107	168	61	59	7			
		51	124	157	118	63	61	11			
				110	158	18	18				
				115	88	61	61				
				111	+	10	63				
				128		+	58				
				55		16	42				
						61	59				
						68	20				
						55	30				
						150	10				
						13	13				
						13	1				
						14					
						11					

Total Vol.	—	—	166	224	1025	566	1092	695	18	—	—
Mean	—	—	53	114	146	111	73	53	7	—	—
Range	—	—	51-55	105-124	55-118	4-118	4-118	13-18	1-11	—	—
No. lizards	—	—	2	2	1	5	15	13	—	—	—

N = 46





Uma notata 12.11.12 Volumes (1+mm V)

1962

Right Testis

Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
		45	111	107	141	57	51	5			
		42	121	162	208	81	41	11			
				221	151	84	151				
				113	16	52	63				
				115	5	15	63				
				131		5	61				
				63		57	44				
						61	53				
						50	4				
						46	53				
						51	12				
						52	16				
						63	52				
						63					
						131					

Total Vol.	-	-	67	240	1055	613	1034	750	25	-	-
Mean	-	-	43	120	151	123	67	56	12	-	-
Range	-	-	42-45	111-121	63-221	5-208	5-131	16-101	5-11	-	-
No. lizards	-	-	2	2	1	5	15	13	-	-	-

N = 46



Total Uma notata Testis Volumes (80 mm - V)

1958 1962

Left Testis

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Total Vol.	—	119	520	2437	5524	3471	3157	1947	201	175	24	—
Mean	—	20	40	76	123	97	75	45	8	7	12	—
Range	—	11-38	5-58	1-178	7-246	4-226	3-173	1-128	1-18	2-41	10-14	—

Right Testis

Total Vol.	—	129	518	2440	5656	3555	3167	2152	221	171	28	—
Mean	—	22	40	76	125	101	75	50	7		17	—
Range	—	12-38	4-57	2-205	9-251	5-236	3-162	2-176	1-20	2-41	12-16	—
No. lizards	—	6	13	32	45	35	42	43	25	23	2	—

N = 266



Uma notata Testis Volume - (< 50 mm S-V)

1958

Left Testis

<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
2.0	0.7	0.1
0.6	0.3	0.3
0.1	0.9	
5.8	2.0	
	1.0	
	2.7	

Total Vol.	8.5	7.6	0.4
Mean	2.1	1.3	0.2
Range	0.1-5.8	0.3-2.7	0.1-0.3

Right Testis

2.5	0.5	0.1
0.9	0.2	0.1
0.1	1.0	
6.3	1.7	
	1.2	
	2.9	

Total Vol.	9.8	7.5	0.2
Mean	2.4	1.2	0.1
Range	0.1-6.3	0.2-2.9	--
No. lizards	4	6	2

N = 12



Uma notata Testis Volume (< 50 mm - V)

1959

Left Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
0.7	0.6	0.7	0.5	0.5	2.0	3.9	0.2	2.5	2.0	0.4	
0.7	1.5	0.4	0.9	0.5	2.8	0.5	3.7	0.7	2.1	0.4	
1.0	1.2	0.1		1.4	1.5	1.4	2.2	0.8	1.2	0.8	
1.0	0.7	0.6		0.4	0.6	0.4	0.5	0.7	4.7	0.7	
	0.2	1.5		0.9			0.3	1.2	1.5	2.7	
		2.5		0.5			0.9	1.2	2.2	1.4	
		5.4		0.2			1.4	1.0	3.7		
							1.7	0.3	1.5		
							27.8	1.5	1.5		
								0.7	2.2		
									0.7		

Total Vol.	3.4	4.2	11.3	1.4	4.4	4.9	6.2	38.7	10.3	23.4	6.4	—
Mean	0.6	0.6	1.6	0.7	0.6	1.2	1.5	4.3	1.0	1.1	1.0	—
Range	0.7-1.0	0.2-1.5	0.4-5.4	0.5-0.9	0.2-1.4	0.6-2.0	0.4-3.7	0.2-27.8	0.3-2.5	0.7-4.7	0.4-2.7	—

Right Testis

1.0	0.7	0.7	0.2	0.6	1.2	2.0	0.2	2.5	0.7	0.5	
0.7	1.5	0.4	0.6	0.5	0.7	0.5	1.0	1.4	5.8	0.5	
1.0	1.5	0.7		1.5	1.7	0.6	1.4	0.8	1.4	1.0	
1.0	0.6	0.9		0.3	0.6	0.5	0.2	0.7	2.7	0.6	
	0.2	1.5		0.7			0.4	1.4	1.0	3.4	
		3.1		1.5			0.9	1.2	2.9	1.0	
		7.9		0.2			0.7	0.7	3.3		
							1.2	0.4	1.0		
							24.6	1.2	1.0		
								1.2	2.7		
									0.9		

N=69

Total Vol.	3.7	4.5	15.2	0.8	4.3	4.2	3.6	30.8	11.5	23.4	7.0	—
Mean	0.9	0.9	2.2	0.4	0.6	1.0	0.7	3.4	1.1	1.1	1.1	—
Range	0.7-1.0	0.2-1.5	0.4-7.9	0.2-0.6	0.2-1.5	0.6-1.7	0.5-2.0	0.2-24.6	0.4-2.5	0.7-5.8	0.5-3.4	—
No. lizards	4	5	7	2	7	4	4	9	10	11	6	—





Uma notata Testis Volumes (<80 mm SVL)

1969

Left Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
	12.7	15.6	0.7		9.0	0.7	2.0	1.5	1.5		
	3.2		15.0		0.8	0.7	1.7	1.7			
	11.3		19.0			0.7	1.4	2.2			
	20.3		8.4			0.7		2.5			
								0.7			

Total Vol.	47.5	15.6	43.1		9.8	3.0	5.1	8.1	1.5		
Mean	11.9	15.6	10.8		4.4	0.7	1.7	1.6	1.5		
Range	3.2-20.3		0.7-19.0		0.8-9.0	0.7-0.9	1.4-2.0	0.7-2.5			

Right Testis

15.6	22.5	0.9		8.0	0.7	1.1	0.5	1.1
3.5		14.1		0.7	0.7	1.5	1.2	
2.5		12.7			0.5	1.1	1.4	
24.6		6.3			0.7		2.0	
							0.7	

Total Vol.	46.2	22.5	34.0		8.7	2.6	4.3	5.8	1.1		
Mean	11.5	22.5	8.5		4.3	0.6	1.4	1.1	1.1		
Range	2.5-24.6		0.9-14.1		0.7-8.0	0.5-0.7	1.1-1.1	0.5-2.0			
No. lizards	4	1	4		2	4	3	5	1		

N = 24



# Uma notata Testis Volumes (< 5 mm - V)

1961

## Left Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
		4.1				2.0	2.0	10.6	1.0		

44.1

5.1

Total Vol.	Mean	Range
4.1	4.1	2.0-44.1

## Right Testis

3.5

2.2 1.2 11.1 1.2

41.1

6.4

Total Vol.	Mean	Range	Ver. li. cords
3.5	3.5	2.2-41.1	1

N = 7



Uma notata Testis Volumes (< 6 mm SV)

1962

Left Testis

Jan Feb Mar Apr May June July Aug Sep Oct Nov Dec

63.6 1.5 10.6 25.4 1.4 1.5

1.4

52.6

40.5

Total Vol. --- --- 163.4 1.5 10.6 25.4 1.4 1.5

Mean --- --- 40.5 1.5 10.6 25.4 1.4 1.5

Range --- --- 1.4-40.5

Right Testis

63.6 1.1 77.1 37.7 1.5 1.8

2.0

41.1

11.4

Total Vol. --- --- 209.1 1.1 11.1 37.7 1.5 1.8

Mean --- --- 52.5 1.1 11.1 37.7 1.5 1.8

Range --- --- 2.0-11.4

No. lizards --- --- 4 1 1 1 1 1

N = 9



Uma notata Adult ♂ (80+ mm S-U)

B

B1

B2

B3

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

II (2)

II

I I

III

II

II

III

I

IIII

I

IIIIII

II





Uma notata Left Testis Volume (May, 1959-1962)  
(80+mm. S-V)

<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
55	3025	120	14400
40	1600	11	121
90	8100	139	19321
94	8836	42	1764
236	55696	94	8836
145	21025	63	3969
111	12321	40	1600
246	60516	107	11449
137	18769	157	24649
111	12321	190	36100
169	28561	198	39204
76	5776	190	36100
246	60516	128	16384
98	9604	55	3025
88	7744		
171	29241		
76	5776		
105	11025		
134	17956		
116	13456		
153	23409		
117	13689		
115	13225		
141	19881		
57	3249		
81	6561		
[7	49]		
171	29241		
182	33124		
179	32041		
193	37249		

$$\Sigma X = 5524$$

$$\Sigma X^2 = 820,504$$

$$N = 45$$

$$\bar{X} = 123$$

$$\bar{X}^2 = 15129$$

$$\text{Range} = 9 - 251 \text{ mm}^3$$

$$s^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$s^2 = \frac{820504 - 45(15129)}{44}$$

$$s^2 = \frac{820504 - 680805}{44}$$

$$s^2 = \frac{139699}{44}$$

$$s^2 = 3175$$

$$S.E. = \sqrt{\frac{s^2}{N}}$$

$$S.E. = \sqrt{\frac{3175}{45}}$$

$$S.E. = \sqrt{70}$$

$$S.E. = 8.4$$



# Uma notata Right Testis Volume (May, 1959-1962)

(80+ mm. S-V)

<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
51	2601	104	10816
51	2601	13	169
124	15376	141	19881
97	9409	34	1156
222	49284	77	5929
161	25921	57	3249
122	14884	39	1521
242	58564	107	11449
134	17956	162	26244
104	10816	229	52441
237	56169	173	29929
91	8281	190	36100
251	63001	131	17161
101	10201	63	3969
118	13924		
193	37249		
72	5184		
111	12321		
157	24649		
105	11025		
128	16384		
118	13924		
162	26244		
158	24964		
109	11881		
111	12321		
[9	81]		
141	19881		
150	22500		
128	16384		
178	31684		

$$\Sigma X = 5656$$

$$\Sigma X^2 = 865,678$$

$$N = 45$$

$$\bar{X} = 125$$

$$\bar{X}^2 = 15625$$

$$\text{Range} = 9 - 251 \text{ mm}^3$$

$$s^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$s^2 = \frac{865678 - 45(15625)}{44}$$

$$s^2 = \frac{865678 - 703125}{44}$$

$$s^2 = \frac{162553}{44} = 3694$$

$$S.E. = \sqrt{\frac{s^2}{N}}$$

$$S.E. = \sqrt{\frac{3694}{45}}$$

$$S.E. = \sqrt{83}$$

$$S.E. = 9.1$$



Uma notata Testis Volumes Combined (May, 1959-1962)

(80+ mm. S-U)

	<u>Left</u>	<u>Right</u>	<u>Total</u>
$\Sigma X$	5524	5656	11180
$\Sigma X^2$	820,504	865,678	1,686,182
$N$	45	45	90
$\bar{X}$	123	125	124
$\bar{X}^2$	15129	15625	15376

Range—: 9-251 mm<sup>3</sup>    9-251    9-251

$$s^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$s^2 = \frac{1,686,182 - 90(15376)}{89}$$

$$s^2 = \frac{1,686,182 - 1,383,840}{89}$$

$$s^2 = \frac{302342}{89}$$

$$s^2 = 3397$$

$$S.E. = \sqrt{\frac{s^2}{N}}$$

$$S.E. = \sqrt{\frac{3397}{90}}$$

$$S.E. = \sqrt{38}$$

$$S.E. = 6.2$$



# Potentially Breeding Uma notata ♂♂ (20<sup>+</sup>mm, S-V)

①

(smallest ♂ = 79 mm)

(largest ♂ = 121 "

Totals, 1958-1961

Date	#♂	No♀	Total	%♀
Aug. '58	0	2	2	0
Sept.	0	1	1	0
Oct.	0	2	2	0
Nov.	0	1	1	0
Mar. '59	0	4	4	0
Apr.	2	3	5	40
May	1	2	3	33
June	3	1	4	15
July	5	0	5	100
Aug.	5	2	7	11
Sept.	1	4	5	20
Oct.	0	1	1	0
Nov.	0	1	1	0
Feb. '60	0	4	4	0
Mar.	0	5	5	0
Apr.	7	4	11	64
May	21	0	21	100
June	4	3	12	75
July	6	1	7	86
Aug.	13	2	15	87
Sept.	6	5	11	54
Oct.	0	7	7	0
Feb. '61	0	2	2	0
Mar.	0	3	3	0
Apr.	5	5	10	50
May	10	4	14	71
June	12	2	14	86
July	16	1	17	94
Aug.	2	4	6	67
Sept.	1	5	6	17
Oct.	0	13	13	0

Month	#♂	No♀	Total	%♀
Feb.	0	6	6	0
Mar.	0	12	12	0
Apr.	14	16	30	47
May	32	6	38	84
June	22	8	30	73
July	25	2	27	93
Aug.	22	8	30	73
Sept.	8	15	23	35
Oct.	0	23	23	0
Nov.	0	2	2	0
Total			224	





Potentially BreedingUma notata 77 (11mm - V) (2)

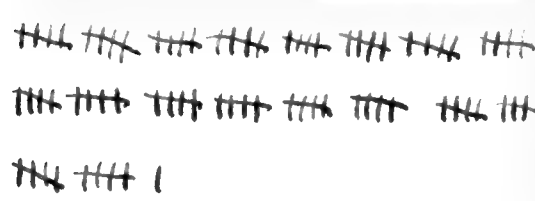
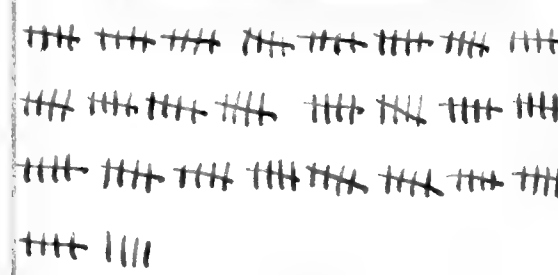
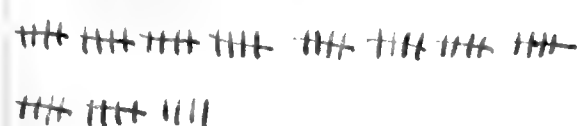
1-1-1, 115 - 1102


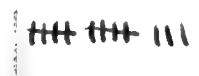
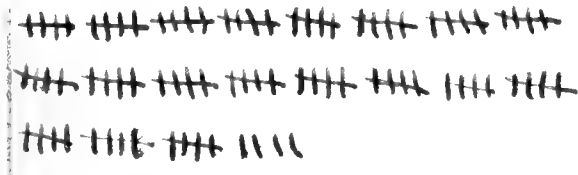
Date	#	N	E	Total	108
Mar. '62	0	2	2	0	
Apr.	1	1	2	50	
May	1	0	1	100	
June	4	1	5	60	
{ July	13	2	15	87	
{ July (flight)	11	2	10	(15)	
{ Aug	13	0	13	100	
{ Aug (flight)	11	0	13	(15)	
Sept	0	2	2	0	

Month	#	N	E	Total	108
Feb	0	6	6	0	
Mar	0	14	14	0	
Apr	15	17	32	47	
May	39	6	45	87	
June	26	4	30	74	
{ July	38	4	42	90	
{ July (flight)	11			(64)	
Aug	35	8	43	61	
{ Aug (flight)	11			(56)	
Sept	8	11	23	32	
Oct	0	22	22	0	
Nov	0	2	2	0	
Total				267	



*Uma notata*  
Differences in Testes Volume  
( $80^+ \text{ mm} \rightarrow -V$ )

Left Testis Larger	Right Testis Larger	Testes Even
		
(91)	(129)	(54)
(33%)	(47%)	(20%)
$N = 274$		
Greatest diff. - mm <sup>3</sup>	Greatest diff. - mm <sup>3</sup>	
(< 50 mm $\rightarrow -V$ )		

		
(14)	(13)	(49)
(11%)		

$N = 126$



Uma notata Immature ♂  
(Breeding Color)

	B	B1	B2	B3
Jan				
Feb				
Mar				
Apr		"	"	
May		"	"	
Jun		"	"	
Jul		"	"	
Aug		"		
Sep				
Oct				
Nov				
Dec				



Uma notata ♀♀

Year                      Ova Accumulate      Yolk

1959

1960

1961

1962 Apr. 14, May 13, June 13, Jul. 14, Aug. 4

Ova Enlarge (> 5 mm. dia.)

1959 May 23, June 11, Jul. 20, Aug. 18

1960 Apr. 13, May 1, June 10, Jul. 11

1961 May 14, June 1, Jul. 11, Sept. 12

1962 Apr. 14, May 13, June 13, Jul. 14, Aug. 4

Oviducts Convolved

1957 Jul. 4, Aug. 15, Sept. 11, Oct. 2, Nov. 15

1960 Feb. 10, Mar. 5, Apr. 13, May 10, June 10, Jul. 11, Aug. 1, Sept. 1, Oct. 15

1961 Mar. 20, Apr. 10, May 14, June 1, Jul. 11, Aug. 11, Sept. 12, Oct. 1

1962 Apr. 14, May 13, June 13, Jul. 14, Aug. 11, Sept. 10

Eggs in Oviduct

1957 May 23, Jul. 20, Aug. 18

1958 - Aug. 23

1960 May 10, June 10, Jul. 10, Aug. 7

1961 May 14, June 1, Jul. 11

1962 May 13, Jul. 14, Aug. 4

Cerpura Lutea

1957 May 23, Jul. 20, Aug. 18, Sept. 1(?)

1958 - Aug. 23

1960 May 10, June 10, Jul. 10, Aug. 7, Sept. 1

1961 May 14, June 1, Jul. 11, Aug. 21(?)

1962 May 13, June 13, Jul. 14, Aug. 4, Aug. 11(?), Sept. 10(?)





# Reproduction in ♀♀ Uma notata (70+ mm, S-V)

Date	Total ♀♀	Ova Accumulate Yolk	Ova enlarge (>5mm. dia.)	Oviducts convoluted + Walls thickened	Eggs in oviduct		Corpora lutea
					# ♀	# eggs	
Aug. 1958	" (2)			"	"	2,	"
Sept.	1 (1)						
Oct.	1 (1)						
Mar. 1959	" (3)						
Apr.	+++ (5)	1	1				
May	+++ (5)	1	1		III	2, 2, 3	III
June	" (2)	"	"				
July	+++ 1 (6)	1	1	III	1	2	" [1-?]
Aug.	+++ II (7)	"	"	III	1	1	1 [11-?]
Sept.	+++ IIII (9)			+++			[III-?]
Oct.	" (2)			"			
Nov.	" (2)			"			
Feb. 1960	1 (1)			1			
Mar.	" (2)			1			
Apr.	+++ (5)	1	1	III			
May	+++ IIII (9)	+++	IIII	+++ II	1	2	1
June	+++ +++ (10)	+++ 1	III	+++ II	III	3, 4, 2	IIII
July	+++ III (8)	III	"	+++	1	2	1 [1-?]
Aug.	+++ 1 (6)			+++	1	2	1 [III-?]
Sept.	+++ II (7)			+++ II			1 [+++ 1-?]
Oct.	+++ +++ III (13)			+++ IIII			
Mar. 1961	+++ (5)			III			
Apr.	+++ 1 (6)			+++ 1			
May	II (17)	+++ +++	+++ +++ III	+++ III	II	3, 2	II
June	+++ III (8)	+++ II	+++ II	+++ III	1	2	1
July	+++ IIII (9)	+++ II	+++ 1	+++ IIII	1	1	" [11-?]
Aug.	1 (1)			1			[1-?]
Sept.	" (2)	1	1	1			
Oct.	+++ +++ IIII (14)			+++ +++ IIII			



# Reproduction in ♀♀ Uma notata (70+mm, S-U)

2.

Date	Total ♀♀	Ova Accumulated Yolk	Ova enlarge (>5mm. dia.)	Oviduct convoluted + Walls thickened	Eggs in oviduct		Corpora lutea
					# ♀	# eggs	
Apr. 1962	### III (8)	### I	I	### I			
May	### IIII (9)	###	IIII	### III	IIII	2,2,2,2	IIII
June	### IIII (9)	### II	### II	### IIII			III
July	### III (8)	II	II	### II	II	1,2	II
Aug.	### I (6)	II	II	### I	I	2	[II-?]
Sept.	### (5)			###			[IIII-?]
							[###-?]

Totals 213

24

Range

Mean

N=213

## Total adult ♀♀

Feb.	1
Mar.	10
Apr.	24
May	40
June	29
July	31
Aug.	22
Sept.	24
Oct.	30
Nov.	2
Total	213



Uma notata  
SIZE OF EGGS IN OVIDUCT

LEFT

RIGHT

LIZARD NO.

SIZE IN mm.

76 21.5 x 11.3  
78 19.0 x 11.5  
85 17.5 x 11.0 18.0 x 12.0  
116 19.8 x 10.7  
137  
307 22.8 x 12.5  
316 20.8 x 11.5  
324 18.9 x 12.8 19.8 x 12.9  
329 21.5 x 12.1  
344 19.6 x 9.4  
373 20.1 x 9.9  
502 24.5 x 14.4 19.4 x 12.9  
512 19.1 x 11.0  
523  
554 22.3 x 12.6  
638 19.0 x 12.0  
639 19.6 x 11.0  
645 20.7 x 9.4  
647 18.5 x 10.8  
666 20.0 x 10.8  
667 20.1 x 13.0  
691 17.3 x 10.0

SIZE IN mm.

22.0 x 11.3  
20.0 x 11.5  
18.5 x 11.0  
23.0 x 11.0  
22.5 x 12.5  
18.8 x 16.2 19.2 x 12.1  
19.6 x 11.2 20.3 x 12.1  
20.6 x 12.9  
20.3 x 9.3  
20.3 x 9.8  
22.6 x 12.3  
20.7 x 11.7  
21.2 x 15.6 19.6 x 12.8  
22.3 x 11.4  
20.5 x 11.5  
20.6 x 10.5  
22.0 x 11.7  
21.5 x 10.0  
19.0 x 10.0

Size of eggs laid

23.5 x 11.1 mm.; 1.71 gms.

22.3 x 11.1 mm.; 1.68 gms.



Uma notata Adult ♀ (70+ mm S-U)  
(Breeding Color)

B	B1	B2	B3
Jan			
Feb			
Mar			
Apr	III	I	
May	III		III
Jun		II	III
Jul		II	III
Aug			III
Sep	I	III	I
Oct			
Nov			
Dec			





(ma notata)

# Size of eggs laid

mm		# laid but not measured	C.T. (gms)
23.5 X 11.1	19.3 X 11.4	3	1.71
22.3 X 11.1	20.3 X 10.4	2	1.66
22.0 X 12.0	19.7 X 11.5	2	1.74
22.0 X 12.0	— —	1	1.55
22.0 X 13.0	21.8 X 11.6	2	1.52
24.0 X 13.0	22.1 X 10.1	<div> <div>2 eggs in basket in right wing, none in left</div> </div>	
20.0 X 11.0	21.6 X 11.7		
22.0 X 12.0	22.0 X 12.4		
20.0 X 11.0			

17.5 X 11.0
18.0 X 12.0
18.0 X 11.0
19.0 X 12.0
18.0 X 12.0
21.0 X 13.0
22.0 X 12.0
18.5 X 13.0
22.0 X 11.0

$$N = 36$$

$$\bar{X} = 20.3 \times 11.5 \text{ mm}$$

$$\text{Range} = 24.0 \times 13.0 \text{ to } 17.5 \times 10.0$$

No. laid	%
1 — 3	15
2 — 10	50
3 — 5	25
4 — 1	5
5 — 1	5

$$N = 20$$

20.0 X 10.0
18.0 X 11.0
19.0 X 10.0
20.0 X 11.0
21.0 X 12.0
21.0 X 13.0
19.0 X 12.5
18.2 X 10.4
17.9 X 11.5
18.7 X 11.5
19.0 X 10.6



Uma notata

EGGS IN OVIDUCT

LEFT

RIGHT

NO. of EGGS	0	1	2	3	4	5	6	7	8	9	10		0	1	2	3	4	5	6	7	8	9	10	
NO. of TAG																								
76		✓												✓										
78		✓												✓										
85			✓											✓										
116		✓											✓											
137	✓													✓										
307		✓												✓										
316		✓													✓									
324			✓												✓									
329		✓												✓										
344		✓												✓										
373		✓												✓										
382			✓											✓										
512		✓												✓										
523	✓														✓									
554		✓											✓											
638		✓												✓										
639		✓												✓										
645		✓												✓										
647		✓												✓										
666		✓											✓											
667		✓												✓										
691		✓												✓										

N = 22

#	%
1-4	18
2-14	64
3-3	14
4-1	4

(excluded)



# Left side

Animal No.	# eggs ovulated	# C.L.
76	1	1
78	1	1
✓ 85	2	1
✓ 116	1	1
✓ 137	0	1
357	1	1
✓ 316	1	2
324	2	2
329	1	1
344	1	1
373	1	1
✓ 502	2	2
512	1	1
✓ 523	0	1
✓ 554	1	1
638	1	1
639	1	1
✓ 645	1	0
647	1	1
✓ 666	1	1
667	1	1
✓ 691	1	2

0	1	1
	1	1
	1	2
	0	1
	1	1
	2	1
	2	2
	1	1
	1	1
	1	1
	1	1
	2	1
	0	0
	1	1
	1	1
	1	2
	1	1
	1	1
	1	1

(✓ = included in table)

N=22

23% unequal number of eggs ovulated

99% <sup>total</sup> eggs ovulated in 22 animals









Uma notata Immature  
(No. of ova)

No.	Left ovary	Right ovary
1	(3) 77%	
2	(12) 149%	
3	(28) 28%	
4	(29) 27%	
5	(15) 14%	22%
6	7%	7%
7		1%
8		
9		
10		
11		
12		
13		
14		
15		







Uma notata Adults (80x mm S-V)

(15)

Left testis anterior

(16)

Right testis anterior

(17)

Testes even

|||||

45

15.2



Uma notata Immature (< 80 mm S-V)

(15)  
Left testis anterior

(16)  
Right testis anterior

(17)  
Testes even

||||

(8)

(10)





Uma notata Immature ♀  
(Breeding Color)

B

B1

B2

B3

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

I

||||

I



Uma notata  
FAT BODIES  
⑦

MONTH	(80+ ♂ mm.)	ADULT (70+ ♀ mm.)	♂	IMMATURE ♀
JAN. 4		1		
FEBRU 15		7		
MARCH 22		22		
APR. 22				
MAY 25				
JUN 21		41		
JUL 25		22		
AUG 24				
SEPT. 25		41		
OCT. 29				
NOV. 19				
DEC. 2				

pencil #1, 2  
pencil #1, 2  
pencil #1, 2



1. Greatest difference between testes volumes, same animal: 1.84 mm<sup>3</sup>
2. Right testis always anterior to left in body.
3. Right ovary always anterior to left
4. (Graph made for difference in testes volumes)
5. Time for bodies present: 0.7-  
7-



UMA SCOPARIA





61. *Supra* ...

	Tau	Fu	ma	sp	Day	ma	re	ma	sp	ma	sp
1											
2	1							1			
3			5				1	1		1	1
4		1	1	1							
5				4	3	1		2			
6				23	42	14	3				
7						10	10	1	2	2	
8						3	12	12	4	1	
9					1				1	1	
0											
N	1	1	6	25	44	20	20	40	15		

02

1											
2	100	<del>100</del> 8						2.5			
3			83				4	4.5		4.5	100
4		100		4							
5				14	6	4		5			
6				82	91	62	11				
7						23	30	30	10	1	
8						11	46	42	10	5	
9					3			15	100	100	



# Uma scoparia Testis Volumes (mm<sup>3</sup> ± V)

1957

## Left Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
	75	38	3	117	111	24	9	5	28	—	—
		30	132	80	7	17	13	7	29		
		131	161	79	116	3	10	6	28		
		61	13	123	141	3	11	10	20		
			154	208	4	52	13	11	22		
				118	104	13	1	2	6		
				135	63	8	8		20		
				156	125	21	4		42		
					55	25					

Total Vol.	—	75	280	411	1018	126	100	70	60	333	28	—
Mean	—	15	70	94	121	31	18	7	11	42	28	—
Range	—	—	30-131	3-169	79-208	4-141	3-52	4-13	2-11	8-42	—	—

## Right Testis

65	55	3	158	107	27	9	5	34	32
	30	161	12	10	10	13	9	25	
	121	135	55	104	4	6	7	16	
	66	13	124	113	5	16	25	24	
		150	238	5	42	14	11	17	
			104	81	13	6	3	1	
			157	50	7	2		44	
			141	168	20	4		58	
				52	25				

N = 59  
Largest ♂ =  
Smallest ♂ =

Total V.I.	—	65	272	462	1057	690	164	76	59	187	22	—
Mean	—	65	68	92	132	77	18	9	6	23	32	—
Range	—	—	50-121	3-161	55-238	5-168	4-42	4-16	2-25	7-38	—	—
No. lizards	—	1	4	5	8	9	9	8	6	8	1	—



# Uma Saperia Leiti Volume (83mm - V)

1960

Leit 12.11.

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
		67	159	356	157	42	3	18	20		
		98	235	210	233	24	8	12	31		
		13	230	233	131	53	33	10			
			361	452	135	117	15	17			
			301	311	174	124	36	7			
			222	346	241	157	11				
			303	357	416		10				
			186	337	241		33				
			424	241	240		1				
			301	311			12				
			356	388			27				
			467	317			11				
			167	512			21				
			356	188			1				
				301			10				
Total Vol,	—	—	238	4177	5043	1774	517	247	62	51	—
Mean	—	—	77	300	336	222	80	16	12	25	—
Range	—	—	67-98	159-469	188-512	135-416	24-159	1-38	7-18	20-51	—
No. lizards	—	—	3	14	15	9	6	15	5	2	—

N = 69



Uma scoparia Testis Volumes (50 mm L-V)

1960

Right Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
		64	150	242	122	42	3	20	12		
		66	184	222	238	30	5	11	24		
		81	201	208	122	55	31	18			
			354	317	68	17	6	15			
			212	266	176	124	21	6			
			116	263	246	141	13				
			354	361	11		23				
			220	331	11		31				
			401	220	241		2				
			355	317			11				
			425	321			21				
			510	341			11				
			113	466			17				
			341	176			13				
				311			12				

Total Vol.	—	—	233	4237	4536	1882	469	241	80	37	—	—
Mean	—	—	77	302	302	209	78	16	16	18	—	—
Range	—	—	64-88	150-510	196-486	88-341	30-141	2-37	8-20	13-24	—	—
No. lizards	—	—	3	14	15	7	6	15	5	2	—	—

N = 69





Uma coparia testis Volume (50+mm S-V)

1961

Left Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
			109	90	13	4	10	7	8		
			111	184	3	4	8	8	7		
			75	174	26	55	10	12	21		
				206	85	13	1	35	21		
				105	91	28	16		13		
				167	42	7	17		8		
				222		1	13		5		
				212			20		7		
				158					27		
				109					15		
				157					4		
				13					15		
				146					41		
				127							
				158							

Total Vol.	—	—	—	295	2230	277	123	105	67	171	—	—
Mean	—	—	—	98	147	50	18	13	11	15	—	—
Range	—	—	—	75-111	13-222	3-91	4-55	7-20	1-35	4-41	—	—
No. lizards	—	—	—	3	15	6	7	8	4	13	—	—

N = 56



# Uma Superior Testis Volumes (80 mm x V)

1961

## Right Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
			102	110	38	8	8	7	15		
			96	113	4	5	8	11	8		
			82	131	61	52	29	15	21		
				154	89	16	7	42	21		
				11	90	27	18		24		
				118	97	10	17		13		
				157		7	11		6		
				150			26		7		
				127					20		
				81					13		
				187					5		
				15					12		
				118					24		
				89							
				125							

Total Vol.	—	—	—	280	1766	387	125	125	75	194	—
Mean	—	—	—	93	118	64	18	16	19	15	—
Range	—	—	—	82-102	<sup>15-</sup> <del>87</del> 184	4-99	5-52	8-29	7-42	5-34	—
No. livers	—	—	—	3	15	6	7	8	4	13	—

N = 50



# Uma suparia testis Volume (mm - V)

1962

Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
			71	223	12	6	2	6			
			198	153	235	1	7	21			
			227	220	3	2	4				
			158	113	128	5	0				
			128	113	3	2	8				
			121	111	16	1	1				
			35	201	3	10	8				
			60	252	51	7	5				
			117	268	62	20	15				
			111	147	57	41					
				42	78	41					
				41	111	2					
				115	111						
					112						

Total Vol.	—	—	—	1275	2365	1132	144	56	27	—	—
Mean	—	—	—	130	182	81	12	6	13	—	—
Range	—	—	—	35-229	47-288	3-235	1-47	1-15	6-21	—	—
No. lizards	—	—	—	15	15	17	12	9	2	—	—

N = 60



# Uma - operis Testis Volume (st<sup>+</sup>mm - V)

1962

## Right Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
			57	250	155	8	4	6			
			246	161	235	2	1	24			
			176	247	3	3	5				
			147	203	101	7	8				
			135	203	5	—	7				
			115	247	111	5	—				
			24	21	5	13	11				
			57	244	64	6	5				
			137	263	63	25	17				
			16	164	55	55					
				18	75	41					
				57	113	5					
				115	115						
					80						

Total Vol.	—	—	—	1215	2406	1135	148	69	30	—	—
Mean	—	—	—	121	185	81	12	8	15	—	—
Range	—	—	—	24-246	39-263	3-235	2-41	2-17	6-24	—	—
No. lizards	—	—	—	10	13	14	12	7	2	—	—

N = 60





# Total Urea - Coparia Testis Volume (20+mm - V)

1957-1962

## Left Testis

	Jan	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec
Total Vol.	—	75	518	6263	10656	4151	952	481	222	581	28	—
Mean	—	75	74	196	209	109	28	12	13	25	28	—
Range	—	—	30-131	3-469	13-512	3-416	1-159	1-38	2-35	4-42	—	—

## Right Testis

Total Vol.	—	65	505	6194	9765	4094	906	511	244	418	32	—
Mean	—	65	72	194	191	108	27	13	14	18	32	—
Range	—	—	30-121	3-510	<del>15</del> 486	3-341	2-141	2-37	3-42	5-38	—	—
No. lizards	—	1	7	32	51	38	34	40	11	23	1	—

N = 244



# Uma scoparia Left Testis Volume (May, 1959-1962)

(80<sup>+</sup>mm. S-V)

<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
117	13689	158	24964
80	6400	109	11881
79	6241	157	24649
123	15129	13	169
208	43264	146	21316
118	13924	127	16129
135	18225	158	24964
158	24964	223	49729
356	126736	153	23409
210	44100	220	48400
233	54289	193	37249
452	204304	193	37249
371	137641	179	32041
348	121104	261	68121
354	125316	252	63504
339	114921	288	82944
241	58081	149	22201
371	137641	92	8464
388	150544	47	2209
379	143641	115	13225
512	262144		
188	35344		
301	90601		
90	8100		
184	33856		
174	30276		
206	42436		
105	11025		
169	28561		
222	49284		
212	44944		

$$\Sigma X = 10656$$

$$\Sigma X^2 = 2,809,542$$

$$N = 51$$

$$\bar{X} = 209$$

$$\bar{X}^2 = 43681$$

$$\text{Range} = 13 - 512 \text{ mm}^3$$

$$S^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$S^2 = \frac{2,809,542 - 51(43681)}{50}$$

$$S^2 = \frac{2809542 - 2227731}{50}$$

$$S^2 = \frac{581811}{50}$$

$$S^2 = 11636$$

$$S.E. = \sqrt{\frac{S^2}{N}}$$

$$S.E. = \sqrt{\frac{11636}{51}}$$

$$S.E. = \sqrt{228}$$

$$S.E. = 15.1$$



# Uma scoparia Right Testis Volume (May, 1959-1962)

(80+mm. S-U)

<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
158	24964	127	16129
72	5184	89	7921
55	3025	184	33856
124	15376	15	225
238	56644	118	13924
104	10816	89	7921
157	24649	120	14400
149	22201	200	40000
246	60516	169	28561
222	49284	249	62001
208	43264	203	41209
379	143641	203	41209
266	70756	249	62001
263	69169	217	47089
361	130321	244	59536
337	113569	263	69169
220	48400	184	33856
379	143641	76	5776
321	103041	39	1521
341	116281	110	12100
486	236196		
196	38416		
311	96721		
110	12100		
113	12769		
131	17161		
154	23716		
91	8281		
118	13924		
157	24649		
150	22500		

$$\Sigma X = 9765$$

$$\Sigma X^2 = 2,359,579$$

$$N = 51$$

$$\bar{X} = 191$$

$$\bar{X}^2 = 36481$$

$$\text{Range} = 15 - 486 \text{ mm}^3$$

$$s^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$s^2 = \frac{2359579 - 51(36481)}{50}$$

$$s^2 = \frac{2359579 - 1860531}{50}$$

$$s^2 = \frac{499048}{50} = 9981$$

$$S.E. = \sqrt{\frac{s^2}{N}}$$

$$S.E. = \sqrt{\frac{9981}{51}}$$

$$S.E. = \sqrt{196}$$

$$S.E. = 14$$



Uma scoparia Testis Volumes Combined (May, 1959-1962)

(80 $\times$ mm. S-V)

	<u>Left</u>	<u>Right</u>	<u>Total</u>
$\Sigma X$	10656	9765	20421
$\Sigma X^2$	2,809,542	2,359,579	5,169,121
$N$	51	51	102
$\bar{X}$	209	191	200
$\bar{X}^2$	43681	36481	40000

Range—: 13-512 mm<sup>3</sup>    15-486    13-512

$$s^2 = \frac{\Sigma X^2 - N(\bar{X})^2}{N-1}$$

$$s^2 = \frac{5,169,121 - 102(40000)}{101}$$

$$s^2 = \frac{5,169,121 - 4,080,000}{101}$$

$$s^2 = \frac{1,089,121}{101}$$

$$s^2 = 10783$$

$$S.E. = \sqrt{\frac{s^2}{N}}$$

$$S.E. = \sqrt{\frac{10783}{102}}$$

$$S.E. = \sqrt{106}$$

$$S.E. = 10.3$$





# Uma scoparia Testis Volumes (L mm = U)

1959

## Left Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Oct (cont.)
0.7	0.2	1.5	0.5	0.7	0.5	0.1	0.7	0.5	1.2	2.2
	0.3	0.8	0.3	0.4	0.4	0.4	0.8		1.4	2.5
	1.8		0.4		0.4	1.4	0.4		1.5	5.8
	0.8		0.2		0.3	0.5	0.4		1.1	
					0.2	0.8	0.2		2.0	
						1.2	0.1		1.2	
						1.4	0.6		5.4	
						0.1			1.2	
									1.7	
									1.5	

Total Vol.	0.7	2.1	2.3	1.4	1.1	1.8	6.5	4.0	0.5	27.6
Mean	0.7	0.5	1.1	0.3	0.5	0.3	0.8	0.6	0.5	2.1
Range	—	0.2-0.8	0.8-1.5	0.2-0.5	0.4-0.7	0.2-0.5	0.4-1.4	0.2-0.7	—	1.0-5.8

## Right Testis

0.2	0.2	1.5	0.5	0.5	0.5	0.7	1.1	0.5	1.4	2.0
	0.3	0.8	0.3	0.4	0.2	0.5	1.5		1.5	2.5
	0.1		0.2		0.2	0.3	0.4		2.2	9.6
	0.8		0.3		0.2	0.5	0.5		0.5	
					0.4	0.5	0.1		1.7	
						1.5	0.7		0.1	
						0.4	0.5		5.4	
						0.5			0.5	
									1.4	
									1.4	

Total Vol.	0.2	2.0	2.3	1.3	0.9	1.5	5.7	5.0	0.5	30.5	N = 47
Mean	0.2	0.5	1.1	0.3	0.5	0.3	0.7	0.7	0.5	2.3	
Range	—	0.2-0.8	0.8-1.5	0.2-0.5	0.4-0.7	0.2-0.5	0.4-1.8	0.2-1.5	—	0.5-9.6	
No. lizards	1	4	2	4	—	5	6	7	1	13	



Uma scoparia Testis Volumes (< 80 mm SVL)

1966

Left Testis

<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>	<u>Oct</u>	<u>Nov</u>	<u>Dec</u>
		9.0	0.4	1.6							
		1.0									
		33.2									
		5.4									

Total Vol.		56.6	0.4	1.6							
Mean		14.1	0.4	1.6							
Range		5.4-33.2									

Right Testis

9.6	0.5	1.1									
1.6											
24.6											
7.1											

Total Vol.	—	—	50.1	0.5	1.1	—	—	—	—	—	—
Mean	—	—	12.7	0.5	1.1	—	—	—	—	—	—
Range	—	—	1.1-24.6	—	—	—	—	—	—	—	—
No. lizard	—	—	4	1	1	—	—	—	—	—	—

N = 6



Uma - oparia Testis Volumes (28 mm - U)

1961

Left Testis

Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
							2.0	1.8	2.0		
							2.0		2.5		
									1.0		
									1.1		

Total Vol.	—	—	—	—	—	—	4.0	1.8	19.2	—	—
Mean	—	—	—	—	—	—	2.0	1.8	4.8	—	—
Range	—	—	—	—	—	—	—	—	2.0-7.6	—	—

Right Testis

2.2	1.8	2.0
2.1		4.1
		1.1
		1.0

Total Vol.	—	—	—	—	—	—	4.9	1.8	21.4	—	—
Mean	—	—	—	—	—	—	2.4	1.8	5.3	—	—
Range	—	—	—	—	—	—	2.2-2.1	—	2.0-1.0	—	—
No. lizards	—	—	—	—	—	—	2	1	4	—	—

N = 1



Uma - ophidia Testis Volumes (c. mm<sup>3</sup> V)

1962

Left Testis

Jan Feb Mar Apr May June July Aug Sep Oct Nov Dec

0.5 6.6

3.2

Total Vol.	-	-	-	-	0.5	1.8	-	-	-	-	-	-
Mean	-	-	-	-	0.5	4.7	-	-	-	-	-	-
Range	-	-	-	-	-	3.2-6.6	-	-	-	-	-	-

Right Testis

0.1 5.4

2.5

Total V-l.	-	-	-	-	0.1	1.1	-	-	-	-	-	-
Mean	-	-	-	-	0.1	3.1	-	-	-	-	-	-
Range	-	-	-	-	-	2.5-5.4	-	-	-	-	-	-
No. lizards	-	-	-	-	1	2	-	-	-	-	-	-

N = 3





Uma - paria  
 Difference in Teste Volume  
 ( $\geq 1 \text{ mm} = V$ )

<u>Left Testis Larger</u>	<u>Right Testis Larger</u>	<u>Testes Even</u>
(111) (44%)	(88) (35%)	(49) (21%)
N = 246		

( $< 1 \text{ mm} = -V$ )

(3)	(4)	(59)
N = 66		



Potentially Breeding Uta - copiosa (10<sup>+</sup> mm, - - V) ①  
 (Smallest ♂ = 80 mm: - smallest caught at rt. time or st.)  
 (Largest ♀ = 112 " )

Totals, 1951-1961

Date	# ♂	No ♀	Total	% ♂
Feb. '59	0	1	1	0
Mar.	0	4	4	0
Apr.	3	2	5	60
May	7	1	8	88
June	7	2	9	78
July	1	0	1	11
Aug.	0	8	8	0
Sept.	0	6	6	0
Oct.	0	8	8	0
Nov.	0	1	1	0
Mar. '60	0	3	3	0
Apr.	14	0	14	100
May	15	0	15	100
June	7	0	7	100
July	6	0	6	100
Aug.	0	15	15	0
Sept.	0	5	5	0
Oct.	0	2	2	0
Apr. '61	0	3	3	0
May	8	7	15	53
June	4	2	6	67
July	1	6	7	14
Aug.	0	8	8	0
Sept.	0	4	4	0
Oct.	0	13	13	0

Month	# ♂	No ♀	Total	% ♂
Feb.	0	1	1	0
Mar.	0	7	7	0
Apr.	17	5	22	77
May	30	8	38	79
June	20	4	24	83
July	8	14	22	36
Aug.	0	31	31	0
Sept.	0	15	15	0
Oct.	0	23	23	0
Nov.	0	1	1	0
			184	



# Potentially Breeding ♂♂ Uma scoparia (60+mm SV)

(2)

Totals, 1957-1962

<u>Date</u>	<u># ♂</u>	<u>No ♂</u>	<u>Total</u>	<u>% ♂</u>
Apr. '62	7	3	10	70
May	12	1	13	92
June	11	3	14	80
July	3	9	12	25
Aug	0	4	4	0
Sept	0	2	2	0
May '63	1	0	1	100

<u>Month</u>	<u># ♂</u>	<u>No ♂</u>	<u>Total</u>	<u>% ♂</u>
Feb	0	1	1	0
Mar	0	7	7	0
Apr	24	8	32	75
May	42	1	51	82
June	31	7	38	82
July	11	23	34	32
Aug	0	40	40	0
Sept	0	11	11	0
Oct	0	23	23	0
Nov	0	1	1	0
			<u>244</u>	



Uma scoparia Adults (80+ mm S-V)

(15) Left testis anterior	(16) Right testis anterior	(17) Testes even





Uma scoparia Immature (< 80 mm S-V)

(15)

Left testis anterior

(16)

Right testis anterior

(17)

Testes even

III



Uma scoparia Adult ♂

B	B1	B2	B3
Jan			
Feb			
Mar			
Apr			
May			
Jun			
Jul			
Aug			
Sep			
Oct			
Nov			
Dec			



Uma scoparia Immature ♂

B

B1

B2

B3

Jan

Feb

Mar

Apr

May <sup>I</sup> <sub>III</sub>

Jun

Jul

Aug

Sep

Oct

Nov

Dec



# 11. *Scopelogadus*

*Scopelogadus left lobes*

- 1959 2/20 to 3/10
- 1960 3/7 to 5/10
- 1961 4/8 to 5/16
- 1962 4/10 to 5/15
- 1963 5/10 to 5/15

*Scopelogadus left lobes*

- 1959 4/22 to 5/10
- 1960 4/11 to 5/14
- 1961 4/11 to 5/14
- 1962 4/11 to 5/14
- 1963 4/11 to 5/14

*Scopelogadus left lobes*

- 1959 4/22 to 5/10
- 1960 7/16 [Aug. 10 DOUBT]
- 1961 7/17 [Aug. 10 DOUBT]
- 1962 7/17 [Aug. 10 DOUBT]
- 1963 7/17 [Aug. 10 DOUBT]

*Scopelogadus left lobes*

- 1959 5/22 to 6/10
- 1960 4/11 to 5/14
- 1961 6/16 to 7/15
- 1962 4/23 to 5/10





Uma notata ♀♀

Year

Ova Accumulate Yolk

1959

1960

1961

1962 Apr. 23, May 6, June 5, Jul. 11

Ova Enlarge (> 5 mm. dia.)

1959 May 22, June 10

1960 Apr. 21, May 22, June 11, Jul. 15

1961 June 16

1962 Apr. 23, May 6, June 5, Jul. 11

Oviducts Convulsed

1959 June 10, Jul. 21, Aug. 10, Sept. 10, Oct. 24

1960 Mar. 1, Apr. 21, May 22, June 11, Jul. 15, Aug. 10, Sept. 11, Oct. 11

1961 Apr. 8, May 6, June 16, Jul. 18, Aug. 10, Sept. 14, Oct. 12

1962 May 6, June 5, Jul. 16, Aug. 10, Sept. 11

Eggs in Oviduct

1959 June 10

1960 May 22, June 11, Jul. 15

1961 June 16

1962 June 5, Jul. 11

Corpora Lutea

1959 June 10, July 22

1960 May 22, June 11, Jul. 15, Aug. 10, Sept. 11(?)

1961 June 16

1962 June 5, Jul. 11, Aug. 11(?), Sept. 11(?)

Eggs in Oviduct and Enlarged (yellow) Eggs in Ovary

1960 3 ♀ with yellow eggs; 6 ♀ with eggs > 5 mm. diameter



# Reproduction in ♀♀ Uma scoparia (70+mm, S-V)

1.

Date	Total ♀♀	Ova Accumulate Yolk	Ova enlarge (>5mm. dia.)	Oviducts convoluted Walls thickened	Eggs in oviduct		Corpora lutea.
					# ♀	# eggs	
Mar. 1959	11 (2)						
Apr.	+++ (5)						
May	1111 (4)	11	1				
June	1111 (4)	1	1		111	3, 2, 2	111
July	++++ 11 (12)	1		+++			1
Aug.	+++ 1111 (9)			1111			[1-?]
Sept.	+++ 111 (8)			+++ 11			
Oct.	+++ (5)			+++			[1-?]
Mar. 1960	11 (2)			1			
Apr.	+++ (5)	1111	1111	1111			
May	+++ 111 +++ 111 (18)	+++ 111 1111	+++ 1111 1111	+++ 1111 1111	+++ 1	5, 4, 4, 3, 1	+++ 1
June	+++ 1111 11 (12)	+++ 1111	+++ 1111	+++ 1111	+++	3, 4 2, 5, 3, 5, 1111	+++
July	+++ 1111 11 (10)	+++	+++	+++ 1111	1111	3 2, 2, 5, 3	1111
Aug.	+++ 1111 111 (13)			+++ 1111 1		2-atrophied 1	[11-?] [1-?]
Sept.	+++ 1111 (10)			+++ 1111			[+++ 1111-?]
Oct.	111 (3)			111			
Apr. 1961	1111 (4)			1111			
May	+++ 1111 1111 (15)			+++ 1111 1111			
June	+++ 1111 (9)	1111	1111	+++ 1111	1	2	1
July	1111 (4)			1111			
Aug.	+++ 111 (8)	1		1			
Sept.	+++ 1 (6)			+++			
Oct.	+++ 11 (7)			111			
Apr. 1962	+++ 11 (7)	111	1				
May	+++ 1111 1111 (14)	+++ 1111	+++ 11	+++ 1111 1			
June	+++ (5)	111	111	+++	11	4, 2	11
July	+++ 1111 11 (12)	11	1	+++ 1111 11	1	2	+++ [+++ 1111-?]
Aug.	+++ 1111 111 (13)			+++ 1111 111			[+++ 1111-?]
Sept.	1111 (4)			1111			[1111-?]

Total

230

22



Reproduction in Uma scoparia ♀♀ (70+mm, S-U) 2.

Total ♀♀ (ad)

Mar. 4

Apr. 21

May 51

June 30

July 38

Aug. 43

Sept. 28

Oct. 15

Total 230



Uma scoparia

# EGGS IN OVIDUCT

LEFT

RIGHT

NO. of EGGS	0	1	2	3	4	5	6	7	8	9	10		0	1	2	3	4	5	6	7	8	9	10	
NO. of TAG																								
67		✓												✓										
68		✓													✓									
69		✓												✓										
220*				✓											✓									
229		✓														✓								
230			✓												✓									
232		✓													✓									
244		✓													✓									
246			✓												✓									
257		✓												✓										
258			✓													✓								
260		✓													✓									
263		✓													✓									
268				✓											✓									
274		✓												✓										
277		✓												✓										
278			✓													✓								
283			✓											✓										
383		✓												✓										
507			✓												✓									
508		✓												✓										
526		✓												✓										

\*ABNORMAL





Uma scoparia

## SIZE OF EGGS IN OVIDUCT

LEFT

RIGHT

LIZARD NO.

SIZE IN mm.

67 19.3 x 12.0

68 17.4 x 11.0

69 21.6 x 13.8

220 <sup>Agony</sup> ~~mess~~

229 20.4 x 11.5

230 20.0 x 11.4 20.7 x 12.8

232 21.6 x 11.4

244 20.9 x 12.2

246 19.2 x 12.6 18.2 x 11.9

257 18.8 x 11.8

258 20.6 x 11.7 19.8 x 12.4

260 19.7 x 11.4

263 20.1 x 12.5

268 19.7 x 12.0 18.0 x 12.6 19.4 x 11.8

274 20.2 x 11.0

277 19.2 x 11.1

278 19.1 x 10.9 18.5 x 11.4

283 18.1 x 10.9 19.1 x 11.9

383 20.8 x 11.8

507 18.9 x 9.5 19.3 x 10.2

508 21.6 x 10.9

526 17.5 x 10.0

SIZE IN mm.

20.0 x 11.7

18.3 x 10.5 12.4 x 10.5

22.6 x 11.8

24.2 x 12.1 20.0 x 10.6

19.8 x 11.7 17.9 x 12.9 17.8 x 13.1

20.3 x 12.2 19.9 x 12.5

18.8 x 12.6 20.0 x 12.3

18.6 x 13.2 18.6 x 12.5

17.5 x 11.9 19.3 x 12.3

20.4 x 11.3

18.5 x 13.5 18.3 x 12.1 23.0 x 16.3

18.2 x 10.7 20.6 x 13.5

18.8 x 11.8 18.2 x 11.9

20.3 x 12.1 19.4 x 10.9

22.0 x 11.5

20.1 x 10.2

17.4 x 12.3 18.5 x 10.9 20.5 x 10.7

FELL OUT

21.0 x 11.0

18.9 x 10.5 18.3 x 10.3

22.5 x 10.9

18.3 x 9.8

 $N = 29$  $\bar{X} = 19.6 \times 11.6 \text{ mm}$ Range = $N = 37$  $\bar{X} = 19.6 \times 11.8 \text{ mm}$ Range = $N = 66$  $\bar{X} = 19.6 \times 11.7 \text{ mm}$ 

Range = 17.4 x 9.5 mm to 24.2 x 16.3 mm



Uma scoparia  
OVA WITH YOLK

LEFT OVARY

RIGHT OVARY

NUMBER OF OVA

1 ~~|||||~~ ||

~~|||||~~ ||

2 ~~||||~~ |

~~||||~~ ~~||||~~ ||

3 ~~|||~~

|||

4

5

6

7

8

9

10



Uma scoparia Adult (70+ mm S-V)

No.	Left ovary	Right ovary
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		



Uma scoparia Immature

No.	Left ovary	Right ovary
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		





Uma scoparia Adult ♀ (70+ mm S-U)

B	B1	B2	B3
Jan			
Feb			
Mar			
Apr III	I		
May IIII	IIII	I	
Jun II		I	II
Jul	II	IIII	IIII
Aug	IIII	II	
Sep	IIII		
Oct			
Nov			
Dec			



Uma scoparia Immature ♀

B

B1

B2

B3

Jan  
Feb  
Mar  
Apr  
May  
Jun  
Jul  
Aug  
Sep  
Oct  
Nov  
Dec



Uma scoparia  
FAT BODIES  
(7)

MONTH	ADULT		IMMATURE	
	♂ (80+mm)	♀ (70+mm)	♂	♀
JAN.				
FEB.				
MAR.	///		///	
APR.				
MAY				
JUN.				
JUL.				
AUG.				
SEPT.				
OCT.				
NOV.				
DEC.				



1. Greatest difference between testis volumes, same animal;
2. Right testis always anterior to left in body,
3. 49/53 - ♀ with right ovary anterior, 4/53 - ovaries even
4. (Graph made for differences in testis volumes)
5. Time fat bodies present -  
 ♀ -





Uma spp.

Uma spp.

May Testis Volumes, *Uma* spp., 1959-1962

①  
notata

$$S^2 = \frac{\sum X^2}{N} - (\bar{X})^2$$

$$S^2 = \frac{811340}{44} - (122)^2$$

$$S^2 = 18439 - 14884$$

$$S^2 = 3555$$

$$S.E. = \sqrt{\frac{S^2}{N}} = \sqrt{\frac{3555}{44}}$$

$$S.E. = \sqrt{88} = 9.4$$

~~S.E.  $\times$  t value (1° freedom)~~

~~5% = 9.4  $\times$~~

~~1% = 9.4  $\times$~~

$$\bar{X} = 122 \pm 9.4$$

(141 - 103)

②  
inornata

$$S^2 = \frac{\sum X^2}{N} - (\bar{X})^2$$

$$S^2 = \frac{1381567}{33} - (189)^2$$

$$S^2 = 41866 - 35721$$

$$S^2 = 6145$$

$$S.E. = \sqrt{\frac{6145}{33}}$$

$$S.E. = \sqrt{186}$$

$$S.E. = 13.6$$

$$\bar{X} = 189 \pm 13.6$$

(162 - 216)

③  
scoparia

$$S^2 = \frac{\sum X^2}{N} - (\bar{X})^2$$

$$S^2 = \frac{2809542}{51} - (209)^2$$

$$S^2 = 55089 - 43681$$

$$S^2 = 11408$$

$$S.E. = \sqrt{\frac{11408}{51}}$$

$$S.E. = \sqrt{224}$$

$$S.E. = 15.0$$

$$\bar{X} = 209 \pm 15.0$$

(179 - 239)

t tests

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{N_1} + \frac{S_2^2}{N_2}}}$$

$$t = \frac{122 - 189}{\sqrt{\frac{3555}{44} + \frac{6145}{33}}}$$

$$t = \frac{67}{\sqrt{88 + 186}}$$

$$t = \frac{67}{\sqrt{274}} = \frac{67}{16.5}$$

$$t = 4.1$$



Uma spp. Summary  
(Dissected for Reproductive Data)

	<u>Ad ♂</u>	<u>Ad ♀</u>	<u>Total Ad.</u>	<u>Im ♂</u>	<u>Im ♀</u>	<u>Total Im.</u>	<u>Grand Total</u>
inornata	189	207	396				
notata	262	210	472				
scoparia	<u>244</u>	<u>230</u>	<u>474</u>	_____	_____	_____	_____
Total	695	647	1342				

	<u>Maximum S-V length(mm)</u>	<u>Maximum Testis volume(mm<sup>3</sup>)</u>
inornata	122	410
notata	121	251
scoparia	113	512

	<u>♂ 80-90 mm, S-V</u>	<u>♂ 91+ mm, S-V</u>
inornata		
notata	92	170
scoparia		

	<u>Smallest ♀ with enlarged eggs</u>	<u>Smallest ♀ with eggs in oviducts</u>
inornata	71 mm S-V	72 mm S-V
notata	" "	" "
scoparia	" "	" "



Uma spp., Potential Breeders, by Size (♂♂)

Uma notata

Month	<u>80-90mm(S-V)</u>				<u>91+mm(S-V)</u>			
	# ♂	No ♀	% ♂	Total	# ♂	No ♀	% ♂	Total
Apr.	2	11	15	13	12	1	92	13
May	7	5	58	12	25	1	96	26
June	8	4	67	12	16	2	89	18
July	7	2	78	9	18	0	100	18
Aug.	6	4	60	10	16	2	89	18
Sept.	2	7	22	9	6	7	46	13
Total				65				106

Uma inornata

Apr.	4	0	100	4	10	9	53	19
May	1	0	100	1	29	2	94	31
June	0	5	0	5	13	8	62	21
July	0	5	0	5	5	5	50	10
Aug.	1	5	20	6	9	18	33	27
Sept.	0	3	0	3	0	17	0	17
Total				24				125

Uma scoparia

Apr.	4	5	44	9	20	3	87	23
May	4	1	80	5	37	9	80	46
June	4	5	44	9	27	2	93	29
July	1	9	10	10	10	14	41	24
Aug.	0	9	0	9	0	31	0	31
Sept.	0	4	0	4	0	14	0	14
Total				46				167





Adult Uma spp. Testis Volumes (May) 1959-1962 (80+mm, S-V) 1.

<u>notata</u>				<u>inornata</u>				<u>scoparia</u>			
X	X <sup>2</sup>	X	X <sup>2</sup>	X	X <sup>2</sup>	X	X <sup>2</sup>	X	X <sup>2</sup>	X	X <sup>2</sup>
55	3025	193	37249	182	33124	328	107584	117	13689	212	44944
40	1600	120	14400	99	9801	188	35344	80	6400	158	24964
90	8100	11	121	121	14641	139	19321	79	6241	109	11881
94	8836	139	19321	130	16900	$\Sigma X = 6225$	$\Sigma X^2 = 1381567$	123	15129	157	24649
236	55696	42	1764	11	121	$\bar{X} = 189$	$\bar{X}^2 = 44866$	208	43264	13	169
145	21025	94	8836	212	44944	<u>Range</u>		118	13924	146	21316
111	12321	63	3969	184	33856	11-410		135	18225	127	16129
246	60516	40	1600	137	18769	N=33		158	24964	158	24964
137	18769	157	24649	249	62001	L100=3		356	126736	223	49729
111	12321	190	36100	150	22500			210	44100	153	23409
169	28561	198	39204	157	24649			233	54289	220	48400
76	5776	190	36100	263	69169			452	204304	193	37249
251	63001	128	16384	158	24964			371	137641	193	37249
98	9604	55	3025	128	16384			348	121104	179	32041
88	7744	$\Sigma X = 5372$	$\Sigma X^2 = 811340$	258	66564			354	125316	261	68121
171	29241	$\bar{X} = 122$	$\bar{X}^2 = 18439$	141	19881			339	114921	252	63504
76	5776	<u>Range</u>		308	94864			241	58081	288	82944
105	11025	7-251		121	14641			371	137641	149	22201
134	17956	N=44		235	55225			388	150544	92	8464
116	13456	L100=17		208	43264			379	143641	47	2209
153	23409			163	26569			512	262144	115	13225
117	13689			137	18769			188	35344	$\Sigma X = 10656$	$\Sigma X^2 = 2809542$
115	13225			198	39204			301	90601	$\bar{X} = 209$	$\bar{X}^2 = 55089$
141	19881			145	21025			90	8100	<u>Range</u>	
57	3249			210	44100			184	33856	13-512	
81	6561			198	39204			174	30276	N=51	
7	49			255	65025			206	42436	L100=6	
171	29241			324	104976			105	11025		
182	33124			78	6084			169	28561		
179	32041			410	168100			222	49284		



<u>notata</u>				<u>inornata</u>				<u>scoparia</u>			
<u>April</u>		<u>May</u>		<u>April</u>		<u>May</u>		<u>April</u>		<u>May</u>	
<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
7	49	94	8836	195	38025	184	33856	159	25281	356	126736
3	9	236	55696	78	6084	137	18769	235	55225	210	44100
3	9	145	21025	69	4761	249	62001	230	52900	233	54289
13	169	111	12321	79	6241	150	22500	361	130321	452	204304
89	7921	246	60516	241	58081	157	24649	309	95481	371	137641
109	11881	137	18769	410	168100	263	69169	222	49284	348	121104
137	18769	111	12321	$\Sigma X =$	$\Sigma X^2 =$	158	24964	363	131769	354	125316
15	225	169	28561	1072	281,292	128	16384	188	35344	339	114921
28	784	76	5776	$\bar{X} = 179$	$\bar{X}^2 = 46882$	258	66564	421	177241	241	58081
109	11881	246	60516	$N = 6$		141	19881	361	130321	371	137641
32	1024	98	9604			$\Sigma X =$	$\Sigma X^2 =$	356	126736	388	150544
42	1764	88	7744			1825	358,737	469	219961	379	143641
145	21025	171	29241			$\bar{X} = 183$	$\bar{X}^2 = 35874$	169	28561	512	262144
198	39204	76	5776			$N = 10$		356	126736	188	35344
158	24964	105	11025					$\Sigma X =$	$\Sigma X^2 =$	301	90601
26	676	134	17956					4199	1,385,161	5043	1,806,407
$\Sigma X =$	$\Sigma X^2 =$	116	13456					$\bar{X} = 300$	$\bar{X}^2 = 98940$	$\Sigma X =$	$\Sigma X^2 =$
1114	140,354	153	23409					$N = 14$		$\bar{X} = 336$	$\bar{X}^2 = 120427$
$\bar{X} = 70$	$\bar{X}^2 = 8772$	117	13689							$N = 15$	
$N = 16$		115	13225								
		141	19881								
		$\Sigma X =$	$\Sigma X^2 =$								
		2885	449,343								
		$\bar{X} = 137$	$\bar{X}^2 = 21397$								
		$N = 21$									

April + May  
 $\Sigma X = 3999$   
 $\bar{X} = 108$   
 $\Sigma X^2 = 589697$   
 $\bar{X}^2 = 15938$   
 $N = 37$

April + May  
 $N = 16$   
 $\Sigma X = 2897$   
 $\bar{X} = 181$   
 $\Sigma X^2 = 640029$   
 $\bar{X}^2 = 40002$

April + May  
 $N = 29$   
 $\Sigma X = 9242$   
 $\bar{X} = 319$   
 $\Sigma X^2 = 3191568$   
 $\bar{X}^2 = 110054$



# Adult Uma spp. Testis Volumes, April and May, Best Year (80<sup>+</sup><sub>mm</sub>, <sup>3</sup>/<sub>S-1</sub>)

<u>1962</u>	
<u>notata</u>	
<u>X</u>	<u>X<sup>2</sup></u>
105	11025
124	15376
157	24649
190	36100
198	39204
190	36100
128	16384
55	3025
<u>ΣX =</u>	<u>ΣX<sup>2</sup> =</u>
1147	181863
$\bar{X} = 143$	$\bar{X}^2 = 22733$
N = 8	

<u>1962</u>	
<u>ingornata</u>	
<u>X</u>	<u>X<sup>2</sup></u>
272	73984
244	59536
137	18769
198	39204
255	65025
324	104976
78	6084
328	107584
188	35344
139	19321
<u>ΣX =</u>	<u>ΣX<sup>2</sup> =</u>
2163	529827
$\bar{X} = 216$	$\bar{X}^2 = 52983$
N = 10	

<u>1960</u>			
<u>scoparia</u>			
<u>X</u>	<u>X<sup>2</sup></u>	<u>X</u>	<u>X<sup>2</sup></u>
159	25281	$\bar{X} = 319$	$\bar{X}^2 = 11054$
235	55225	N = 29	
230	52900		
361	130321		
309	95481		
222	49284		
363	131769		
188	35344		
421	177241		
361	130321		
356	126736		
469	219961		
169	28561		
356	126736		
356	126736		
210	44100		
233	54289		
452	204304		
371	137641		
348	121104		
354	125316		
339	114921		
241	58081		
371	137641		
388	150544		
379	143641		
512	262144		
188	35344		
301	90601		
<u>ΣX =</u>	<u>ΣX<sup>2</sup> =</u>		
9242	319568		



# Adult Uma spp. Testis Volumes, May, Best Year (80<sup>+</sup>mm, 5-v)

4

1962

notata

X      X<sup>2</sup>

157 24649

190 36,100

198 39204

190 36,100

128 16384

55 3025

$\Sigma X = 918$        $\Sigma X^2 = 155462$

$\bar{X} = 153$        $\bar{X}^2 = 25910$

N = 6

1962

inornata

X      X<sup>2</sup>

198 39204

255 65025

324 104976

78 6084

328 107584

188 35344

139 19321

$\Sigma X = 1510$        $\Sigma X^2 = 377538$

$\bar{X} = 216$        $\bar{X}^2 = 53934$

N = 7

1960

scoparia

X      X<sup>2</sup>

356 126736

210 44100

233 54289

452 204304

371 137641

348 121104

354 125316

339 114921

241 58081

371 137641

388 150544

379 143641

512 262144

188 35344

301 90601

$\Sigma X = 5043$        $\Sigma X^2 = 1,806,407$

$\bar{X} = 336$        $\bar{X}^2 = 120427$

N = 15





# Success of ♀♀ *Uma* spp. (Egg Production)

## *U. notata*

	Year	No. ♀♀	<u>Enlarged ova</u>		<u>Eggs in oviduct</u>		<u>Proportion Potential breeders</u>	
			No.	%	No.	%	No.	%
(Apr. - Aug.)	1959	25	7	28	5	20	12	48
	1960	38	10	26	6	16	16	42
	1961	43	27	63	4	9	31	72
	1962	40	16	40	7	18	23	58
	Total	146						

## *U. inornata*

(Apr. - Aug.)	1959	42	5	12	1	2	6	14
	1960	40	10	4	4	10	14	35
	1961	24	12	50	4	17	16	67
	1962	29	6	21	7	24	13	45
	Total	135						

## *U. scoparia*

(Apr. - July)	1959	25	2	8	3	12	5	20
	1960	45	32	71	15	33	45(47)	100
	1961	32	4	12	1	3	5	15
	1962	38	12	32	3	8	15	40
	Total	140						



Juvenile *Uma* spp. Seen

*U. inornata*

<u>Year</u>	<u>Months Seen</u>	<u>Approx. number</u>
1959	July thru Oct.	few, few, 1, 4
1960	July thru Oct.	5, 6, 3, fairly abundant
1961	Aug., Oct.	3, few
1962	Aug.	few

*U. notata*

1958	Aug. thru Dec.	lots
1959	Sept., Oct.	lots (too many to count)
1960	Aug. thru Oct.	lots
1961	Aug. thru Oct.	lots
1962	July thru Sept.	1, 1, lots

*U. scoparia*

1959	Sept., Oct.	5, 4
1960	July thru Oct.	lots (36 caught)
1961	Oct.	1 (very scarce)
1962	Sept.	3 seen (scarce)



Uma inornata Adult ♀ (70<sup>+</sup>mm. S-U)

(19) Left ovary anterior	(18) Right ovary anterior	(20) Ovaries even



Uma notata Adult ♀ (70<sup>+</sup> mm. S-V)

(19) LEFT OVARY ANTERIOR	(18) RIGHT OVARY ANTERIOR	(20) OVARIES EVEN
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Uma scoparia Adult ♀ (70<sup>+</sup> mm. S-V)

(19) LEFT OVARY ANTERIOR	(18) RIGHT OVARY ANTERIOR	(20) OVARIES EVEN
	<div data-bbox="672 389 1299 511">                                   </div>	



UROSAURUS GRACIOSA



# UROSAURUS

TOTAL

MONTH

1911

1912

	♂	♀	Total	♂	♀	Total
JAN	-	-	-	-	-	-
FEB	-	1	1	5	1	6
MAR	1	1	2	24	1	25
APR	5	2	7	52	47	99
MAY	3	1	4	32	32	64
JUN	-	1	1	11	23	34
JUL	1	2	3	20	26	46
AUG	1	1	2	24	18	42
SEP	-	1	1	3	27	30
OCT	-	2	2	1	9	10
NOV	-	-	-	1	2	3
DEC	-	-	-	1	-	1
	12	12	24	230	196	426

100000



UPPER HALF SEP 1 1961

MALE

ENLARGED TESTIS (1 & 2 1962)

1959 3/21 - 9/11

1960 1/10 - 3/14

1961 5/1 - 7/1

1962 1/11 - 3/1

3/11 - 5/1

CONVOLUTED EPIDIDYMIS

1959 4/1 - 5/1

1960 1/1 - 2/1

1961 1/1 - 2/1

1962 1/1 - 2/1

2/1 - 3/1

1/10/12E 1/10/12E

1959 1/1 - 2/1

1960 1/1 - 2/1

1961 1/1 - 2/1

1962 1/1 - 2/1 (1/1 - 2/1)

1/1 - 2/1

FEMALE

VA MANIPULATED YOUNG

1959 3/21 - 9/11

1960 1/10 - 3/14

1961 5/1 - 7/1

1962 1/11 - 3/1

~~1/11 - 3/1~~

4/13 - 8/21





U.S. ( )

ENLARGED LOGS ( )

1959 ( )

1960 ( )

1961 ( )

1962 ( )

( )

CONVULSED ( )

1959 ( )

1960 ( )

1961 ( )

1962 ( )

( )

ENLARGED ( )

1959 ( )

1960 ( )

1961 ( )

1962 ( )

( )

CORPORA LUTEA

1959 ( )

1960 ( )

1961 ( )

1962 ( )

( )



Potential Breeders, Urosaurus graciosa ♂♂ (45+ mm, -V)

①

(smallest ♂ = 42 mm)

(largest ♂ = 68 " )

Date	# ♂	No ♀	Total	% ♂
Aug. '58	2	0	2	100
Sept.			0	
Oct.	0	2	2	0
Nov.			0	
Dec.	0	1	1	0
Mar. '59	0	5	5	0
Apr.	3	4	7	43
May			0	
June	3	1	4	75
July			0	
Aug.	7	2	9	78
Sept.	0	9	9	0
Oct.			0	
Nov.	0	1	1	0
Feb. '60	0	5	5	0
Mar.	0	11	11	0
Apr.	7	0	7	100
May	4	0	4	100
June	3	1	4	75
July	4	1	5	80
Aug.	2	0	2	100
Sept.	0	4	4	0
Oct.	0	1	1	0
Mar. '61	0	6	6	0
Apr.	2	0	2	100
May	18	0	18	100
June	9	0	9	100
July	4	0	4	100
Aug.	5	0	5	100
Sept.	0	9	9	0
Oct.	0	3	3	0

Totals, 1958 - 1961

Month	# ♂	No ♀	Total	% ♂
Feb.	0	5	5	0
Mar.	0	22	22	0
Apr.	12	4	16	75
May	22	0	22	100
June	15	2	17	88
July	8	1	9	89
Aug.	16	2	18	89
Sept.	0	22	22	0
Oct.	0	6	6	0
Nov.	0	1	1	0
Dec.	0	1	1	0
Total			139	



# Potential Breeders, *Urosaurus* *gracilis* 1-7 (45<sup>+</sup>mm - V)

(2)

Totals, 1958-1962

Date	#	No.	Total	%
Apr. '62	9	6	15	60
May	7	0	7	100
June	4	1	5	80
July	7	4	11	64
Aug.	4	2	6	67
Sept.	0	10	10	0
Apr. '63	7	<del>3</del>	10	<del>70</del>
May	2	0	2	100
June	2	0	2	100
Mar.	0	2	2	0
Apr. '64	9	3	12	75
Sep.	4	1	5	80
Oct.	0	3	3	0

Month	#	No.	Total	%
Feb	0	5	5	0
Mar	0	22	22	0
Apr	21	10	31	68
May	29	0	29	100
June	19	3	22	86
Jul.	15	5	20	75
Aug	20	4	24	83
Sept	0	32	32	0
Oct	0	6	6	0
Nov	0	1	1	0
Dec	0	1	1	0
Total			193	

Totals, 1958-1964

Month	#	No.	Total	%
Feb	0	5	5	0
Mar	0	24	24	0
Apr	37	16	53	70
May				
Jun				
Jul				
Aug				
Sep	4	33	37	10
Oct				
Nov				
Dec				

Totals, 1958-1963

Month	#	No.	Total	%
Feb.	0	5	5	0
Mar	0	<del>24</del>	<del>24</del>	0
Apr	28	13	41	68
May	31	0	31	100
Jun	21	3	24	88
Jul.	15	5	20	75
Aug	20	4	24	83
Sep	0	32	32	0
Oct.	0	6	6	0
Nov	0	1	1	0
Dec	0	1	1	0
			209	



# Potential Breeders, *Urosaurus* *graciosa* 44 (Glamis) (45 mm - v), ①

Totals, 1958-1962

Date	# ♂	No ♀	Total	% ♂
Oct. '58	0	2	2	0
Nov.			0	
Dec.	0	1	1	0
Mar. '59	0	5	5	0
Apr	3	3	6	50
May			0	
June	3	0	3	100
July			0	
Aug	2	0	2	100
Sept		6	6	0
Oct			0	
Nov	0	1	1	0
Feb '60	0	5	5	0
Mar	0	11	11	0
Apr	2	0	2	100
May	2	0	2	100
June	3	1	4	75
July	2	1	3	67
Aug	2	0	2	100
Sept	0	4	4	0
Oct.	0	1	1	0
Mar. '61	0	6	6	0
Apr	1	0	1	100
May	17	0	17	100
June	6	0	6	100
July	3	0	3	100
Aug	5	0	5	100
Sept	0	7	7	0
Oct	0	3	3	0

Month	# ♂	No ♀	Total	% ♂
Feb	0	5	5	0
Mar	0	22	22	0
Apr	15	9	24	62
May	23	0	23	100
June	15	2	17	88
July	10	4	14	71
Aug	13	2	15	87
Sept	0	27	27	0
Oct	0	6	6	0
Nov	0	1	1	0
Dec	0	1	1	0
Total			155	





Potential Breeders, *Uro-aurea* *graciosa* ♂♂ (Glami) (45<sup>th</sup> mm - v)

<u>Date</u>	<u>#</u>	<u>NE</u>	<u>Total</u>	<u>NE</u>
Apr. '62	9	6	15	60
May	4	0	4	100
June	3	1	4	15
July	5	3	8	63
Aug	4	2	6	67
Sept	0	10	10	0
Apr. '63	7	3	10	70
May	2	0	2	100
June	2	0	2	100
Mar. '64	0	2	2	0
Apr.	9	2	11	82



Urosaurus graciosa Testis Volumes (15 mm x 5-V)

1958

Left Testis

AUG SEPT OCT NOV DEC

11 — 3 — 11

11 10

TOTAL VOL 22 0 13 0 11

MEAN 11.0 0 ~~6.5~~ 0 11

RANGE — 0 3-10 0 —

NO. LIZARDS 2 0 2 0 1

Right Testis

AUG SEPT OCT NOV DEC

9 — 4 — 10

8 8

TOTAL VOL 17 0 12 0 10

MEAN 8.5 0 6.0 0 10

RANGE 8-9 0 4-8 0 —

NO. LIZARDS 2 0 2 0 1

Glans = total in Oct., Dec.



# *Urosaurus* *graciosa* Testis Volumes (45mm S-V)

1959 Total

*Left Testis*

(total = blanks in Mar, Nov.)

MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV
24	8	—	8	—	14	1	—	10
10	19		14		23	2		
38	23		15		3	3		
25	17		18		12	2		
19	7				2	4		
	30				3	4		
	16				3	2		
					8	1		
					3	3		

TOTAL VOL	116	120	0	55	0	71	22	0	10
MEAN	23.2	17.1	0	13.8	0	7.9	2.4	0	10
RANGE	10-38	7-30	0	8-18	0	2-23	1-4	0	—
NO. LIZARDS	5	7	0	4	0	9	9	0	1

*Right Testis*

MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV
24	8	—	6	—	8	1	—	8
6	13		14		16	3		
30	18		16		3	3		
22	19		17		12	4		
30	9				2	4		
	28				3	4		
	16				3	4		
					4	1		
					3	5		

TOTAL VOL	112	111	0	53	0	54	29	0	8
MEAN	22.4	15.9	0	13.3	0	6.0	3.2	0	8
RANGE	6-30	8-28	0	6-17	0	2-16	1-5	0	—
NO. LIZARDS	5	7	0	4	0	9	9	0	1



Iltosaurus graciosus Testis Volume. (45+ mm S-V)

1959 (Glamis Only)

Mar	Apr	May	<u>Left testis</u>		Aug	Sep	Oct	Nov
			<u>Jun</u>	<u>Jul</u>				
same	19	—	14	—	14	2	—	same
	23		15		23	3		
	17		18			2		
	7		18			3		
	30					4		
	16					2		

$\Sigma X$	116	112	47		37	16		10
$N$	5	6	3		2	6		1
$\bar{X}$	23.2	18.7	15.7		18.5	2.7		10

Range 10-38 7-30

		<u>Right</u>	<u>testis</u>		
13	—	14	—	8	3
18		16		16	3
19		17			4
9		<del>8</del>			3
28					4
16					4

$\Sigma X$	112	103	47		24	21		8
$N$	5	6	3		2	6		1
$\bar{X}$	22.4	17.2	15.7		12	3.5		8

range 6-30





# *Urosaurus graciosa* Testis Volumes (45<sup>+</sup> mm S-V)

1960 Total

Left Testis

(Total = Glanias in Feb, Mar, Jun, Aug, Sept)

FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT
24	47	43	45	42	28	26	8	1
35	75	47	31	5	8	12	2	
10	34	36	41	45	6		3	
16	13	34	24	18	9		6	
14	39	45			6			
	47	30						
	29	35						
	39							
	43							
	30							
	10							

TOTAL VOL	99	406	270	141	110	57	38	19	1
MEAN	19.8	36.9	38.6	35.3	27.5	11.4	19.0	4.8	1
RANGE	10-35	10-75	30-47	24-45	5-45	6-28	12-26	2-8	—
NO. LIZARDS	5	11	7	4	4	5	2	4	1

Glanias

Sum	45	47	31	8	6	9
-----	----	----	----	---	---	---

$\Sigma x$	90	76	23
$N$	2	2	3
$\bar{x}$	45	38	7.7

Range



# Urosaurus graciosa Testis Volumes (45+mm S-V)

1960 Total

Right Testis

(Total = Glamis, Indio, San Jacinto, Anza, San Felipe, Cal.)

FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT
23	44	46	34	40	10	25	6	1
24	57	57	42	4	7	8	2	
10	27	33	38	38	3		3	
13	14	29	20	20	8		4	
13	31	38			3			
	34	28						
	24	29						
	30							
	42							
	24							
	11							

TOTAL VOL	83	338	260	134	102	31	33	15	1
MEAN	16.6	30.7	37.1	33.5	25.5	6.2	16.5	3.8	1
RANGE	10-24	11-57	28-57	20-42	4-40	3-10	8-25	2-6	-
NO. LIZARDS	5	11	7	4	4	5	2	4	1

Glamis

46	34	7
57	42	3
		8



*Urosaurus* *graciosa* Testis Volumes (45<sup>+</sup>mm S-V)

1961 Total

Left Testis

MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT
30	18	41	7	24	21	2	6
30		26	94	24	28	3	8
35		24	42	26	42	3	10
10		29	45	13	17	5	
45		30	47		18	4	
52		52	71			5	
		69	81			4	
		34	24			3	
		30	14			2	
		30	21				
		1					
		39					
		31					
		11					
		27					
		27					
		29					
		42					
		26					

TOTAL VOL	202	18	598	446	87	126	31	24
MEAN	33.7	18	31.5	44.6	21.8	25.2	3.4	8.0
RANGE	10-52	—	1-69	7-94	13-26	17-42	2-5	6-10
NO. LIZARDS	6	1	19	10	4	5	9	3

(total = Glamis in Mar)



Urosaurus graciosa Testis Volumes (45+mm S-V)

1961  
Right Testis

MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT
21	15	33	6	22	13	3	5
27		22	39	20	22	3	7
26		21	30	22	26	3	7
11		18	38	11	14	6	
46		25	37		19	3	
48		40	72			5	
		43	34			4	
		33	16			3	
		27	13			2	
		39	16				
		.5					
		30					
		30					
		12					
		26					
		24					
		29					
		33					
		24					

TOTAL VOL	179	15	688.5	301	75	94	32	19
MEAN	29.8	15	36.2	30.1	18.8	18.8	3.6	6.3
RANGE	11-48	—	.5-43	6-72	11-22	13-26	2-6	5-7
NO. LIZARDS	6	1	19	10	4	5	9	3

(total = Glamis in Mar)





Urosaurus graciosus Testis Volumes (45+ mm S.V.)

1961 - Glamis Only

		<u>Left</u>		<u>Testis</u>			
Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
same	3	41	94	24	21	2	same
	18	26	42	24	28	3	8
		24	45	26	17	3	VC
		29	47		18	5	
		30	71			4	
		52	81			5	
		69				4	
		34					
		30					
		30					
		1					
		39					
		31					
		11					
		27					
		27					
		29					
		42					
		24					

$\Sigma x$	21	598	380	74	87	26
$\bar{x}$	10.5	31.5	63.3	24.7	21	3.7
N	2	19	6	3	4	7

range



# Urosaurus graciosus Testis Volumes (45<sup>+</sup> mm S-V)

1962 Total

Left Testis

(total = Glanús in Apr, Aug, Sep)

APR	MAY	JUN	JUL	AUG	SEPT
52	24	17	27	2	3
61	21	5	20	11	2
48	14	15	16	18	3
11	30	13	25	16	.5
43	39	18	21	28	4
41	52		19	16	4
53	18		22		3
18			20		.5
65			23		3
55			16		2
10			.5		
52					
63					
14					
22					

TOTAL VOL 608 198 68 209.5 91 25

MEAN 40.5 28.3 13.6 19.0 15.2 2.5

RANGE 10-65 14-52 5-18 .5-27 2-28 .5-4

NO. LIZARDS 15 7 5 11 6 10

Glanús

30 5 25

39 15 21

52 13 19

18 18 22

20

23

16

.5

May Jun Jul

$\Sigma x$  139 51 146

$\bar{x}$  4 4 7

$\bar{x}$  34.8 12.8 26.8

range



Urosaurus graciosa Testis Volumes (45+mm S-V)

1962 Total

Right Testis

(Total = Glan's in Apr, Aug, Sep)

APR	MAY	JUN	JUL	AUG	SEPT
40	21	13	18	2	5
51	18	8	18	13	2
49	17	10	13	17	2
13	32	13	21	13	.5
38	33	17	20	24	4
42	53		18	13	4
48	19		15		5
21			18		.5
51			22		3
47			18		3
15			.5		
55					
48					
13					
22					

TOTAL VOL 553 193 61 181.5 82 29

MEAN 36.9 27.6 12.2 16.5 13.7 2.9

RANGE 13-55 17-53 8-17 .5-22 2-24 .5-5

NO. LIZARDS 15 7 5 11 6 10

Glan's



# Urosaurus graciosa - Testis volumes (45+mm - SV)

1963

## Left Testis

(Total = 614.5 mm<sup>3</sup> / 100 days)

Mar	Apr	May	Jun
<del>31</del>	42	25	18
<del>24</del>	8	16	13
	21		
	42		
	42		
	61		
	35		
	36		
	35		
	26		

$\Sigma X$	348	41	31
$N$	10	2	2
$\bar{X}$	34.8	20.5	15.5
Range			

## Right Testis

max	Apr	May	Jun
<del>30</del>	27	20	16
<del>17</del>	6	13	15
	21		
	31		
	30		
	53		
	30		
	34		
	20		
	24		

$\Sigma X$	274	53	31
$N$	10	2	2
$\bar{X}$	27.4	16.5	15.5
Range			





Arosaenus graciosus - Testis Volumes (45+ mm - S-V)

1964 Total = Clams in all months

<u>Left Testis</u>			
Mar	Apr	Sep	Oct
31	38	5	1
24	47	2	3
	38	3	8
	57	8	
	57	3	
	38		
	57		
	35		
	27		
	45		
	10		
	63		

<u>Right Testis</u>			
Mar	Apr	Sep	Oct
30	33	4	1
<del>33</del>	35	1	5
	36	3	4
	32	5	
	55	3	
	36		
	45		
	55		
	27		
	42		
	5		
	60		

$\Sigma X$	55	512	21	12
$\bar{X}$	27.5	42.7	4.02	4
N	2	12	5	3

47	461	14	10
23.5	38.4	3.2	3.3
2	12	5	3

range



Urosaurus graciosus (45+ mm, S-V)

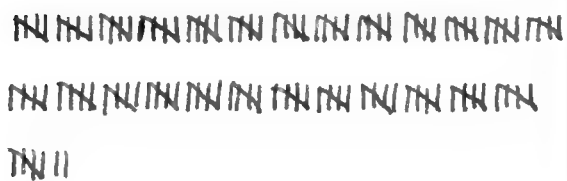
Left Testis volume - Summary - 1958-1963

Month	$\Sigma X$	$N$	$\bar{X}$
Feb	99	5	19.8
Mar	779	24	32.4
Apr	<sup>1419</sup> <del>1364</del>	<sup>2</sup> <del>40</del>	<sup>33.8</sup> <del>34.1</del>
May	978	32	30.6
Jun	710	25	28.4
Jul	353	<del>20</del> <del>34</del>	<del>16.8</del> 17.6
Aug	348	24	14.5
Sep	<sup>118</sup> <del>97</del>	<sup>32</sup> <del>32</del>	<sup>3.2</sup> <del>3.0</del>
Oct.	<sup>50</sup> <del>38</del>	<sup>10</sup> <del>6</del>	<sup>5.0</sup> <del>6.3</del>
Nov.	10	1	10
Dec.	11	1	11



# Testis Volumes, *Urosaurus graciosa* Adults (45+ mm SVL)

Left testis larger



Right testis larger



Testes same size





# Testis Volumes, *Urosaurus graciosa* Immature (< 45 mm SL)

Left testis larger

||||

Right testis larger

||

Testes same size

||||





Urosaurus graciosa Adults (45+mm S-1)

(15)

Left testis anterior

(16)

Right testis anterior

|||||  
|||||

(17)

Testes even



Urosaurus graciosa Immature (< 45 mm S-V)

(15)

Left testis anterior

(16)

Right testis anterior

||||

(17)

Testes even



Urosaurus graciosa Adult ♂ (45+ mm S-L)

B	B1	B2	B3
Jan			
Feb			
Mar			
Apr			
May		-	
Jun	"	"	"
Jul			"
Aug			-
Sep	"		
Oct			
Nov			
Dec			



Urosaurus graciosa Immature ♂

B

B1

B2

B3

Jan  
Feb  
Mar  
Apr "  
May  
Jun  
Jul  
Aug  
Sep  
Oct  
Nov  
Dec





Urosaurus graciosa Adult ♀ (45+ mm. S-V)

(19)

(18)

(20)

LEFT OVARY ANTERIOR	RIGHT OVARY ANTERIOR	OVARIES EVEN
---------------------	----------------------	--------------




## EGGS IN OVIDUCT

LEFT

RIGHT

[illegible]



Urosaurus graciosus  
SIZE OF EGGS IN OVIDUCT

LEFT	RIGHT
LIZARD NO.	
SIZE IN mm	SIZE IN mm
38 11.4 x 7.1	12.8 x 7.1
103 11.7 x 7.8	11.4 x 7.4; 12.0 x 7.5
104 10.8 x 7.5; 12.0 x 7.2	12.0 x 7.5; 13.2 x 7.1
106 10.8 x 6.5; 11.0 x 7.2	12.3 x 7.2
115 10.4 x 7.4	11.7 x 7.2; 11.3 x 7.4
121 11.1 x 7.7; 10.8 x 6.9	11.3 x 7.8; 11.3 x 6.6
198	11.3 x 8.0; 11.7 x 8.0
205 12.8 x 7.1	14.4 x 6.8
208 12.8 x 7.1	13.2 x 6.9
230 10.8 x 6.9; 10.8 x 7.2	12.0 x 6.2
297 12.8 x 7.8	13.1 x 8.0; 12.0 x 8.4
300 12.2 x 7.8	13.5 x 7.2
312 12.8 x 7.2	13.4 x 6.8
315 12.0 x 7.4	12.2 x 7.7; 12.5 x 7.4
322 10.8 x 6.8	9.9 x 6.8; 10.4 x 7.1
407 12.8 x 6.5	14.1 x 6.3
408 10.5 x 6.8; 11.1 x 7.5	12.2 x 7.1
435 11.9 x 6.3	11.0 x 6.6
$\Sigma X = 254.1 \times 158.0$	$\Sigma X = 316.2 \times 188.1$
$N = 22$	$N = 26$
$\bar{X} = 11.6 \times 7.2 \text{ mm}$	$\bar{X} = 12.2 \times 7.2 \text{ mm}$
<u>Range =</u>	<u>Range =</u>

$\Sigma X = 570.3 \times 346.1$   
 $N = 48$   
 $\bar{X} = 11.9 \times 7.2 \text{ mm}$   
 Range = 9.9 x 6.2 mm To 14.4 x 8.4 mm.



Urosaurus graciosa  
OVA WITH YOLK

LEFT OVARY

RIGHT OVARY

NUMBER OF OVA

1 ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~

~~||||~~ ~~||||~~

2 ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~

~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~ ~~||||~~

3 ~~||||~~

~~||||~~

4

5

6

7

8

9

10





⑦

## FAT BODIES

ADULT  
(45+ mm.)

IMMATURE

MONTH

JAN

FEB 11

MAR 19 1964

APR 17 1941

MAY 1971

JUN ~~TH~~ ~~TH~~ ~~TH~~

) JUL III III

AUG 11 11

SEPT ~~TH~~ ~~TH~~ ~~TH~~ ~~TH~~

OCT/11

NOV 1

DEC



Urosaurus graciosus Adult (45+ mm S-V)

No.	Left ovary	Right ovary
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		



Urosaurus graciosus Immature

No.	Left ovary	Right ovary
-----	------------	-------------

1

1

2

3

11

4

1

5

1111

6

111

7

8

9

10

11

12

13

14

15

111

111

1

1

1



Urosaurus graciosa Adult ♀ (45+ mm S-V)

B

B1

B2

B3

Jan

Feb

Mar

Apr ~~|||||~~||

May ~~||~~

Jun ~~||||~~

Jul ~~||||~~

Aug ~~||||~~

Sep ~~||||~~

Oct

Nov

Dec





Urosaurus graciosa Immature ♀

B

B1

B2

B3

Jan

Feb

Mar

Apr 1

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec



UTA STANSBURIANA



1.R. - 13 8 1/2 x 11



ITA STANSBURIANA

DATA

STATIONARY

TOTAL

MONTH

1911/12

1912/13

ST

Q

15

ST

Q

15

JAN

3

2

5

14

4

20

FEB

-

-

-

7

1

16

MAR

1

2

3

43

10

25

APR

2

1

3

14

11

21

MAY

2

1

3

51

28

97

JUN

-

-

-

7

13

40

JUL

-

-

-

1

5

7

AUG

6

-

6

14

10

24

SEP

10

6

16

17

7

25

OCT

5

4

9

7

1

5

NOV

-

-

-

-

-

-

DEC

-

-

-

1

-

1

29 16 45

227 140 373

70.00



MALE

ENLARGED TESTIS (7. mm<sup>3</sup>)

- 1959 11-29 11-29  
1960 11-29 11-29  
1961 11-29 11-29  
1962 11-29 11-29  
11-29 11-29

CONVULSED DISORDERS

- 1959 11-29 11-29  
1960 11-29 11-29  
1961 11-29 11-29  
1962 11-29 11-29  
11-29 11-29

MOBILE PERIOD

- 1959 11-29 11-29  
1960 11-29 11-29  
1961 11-29 11-29  
1962 11-29 11-29

~~11-29 11-29~~ 7/16 CH

FEMALE

EVA ACCUMULATED YORK

- 1959 11-29 11-29  
1960 11-29 11-29  
1961 11-29 11-29  
1962 11-29 11-29  
11-29 11-29





U.S. (CONT.)

ENLARGED EGGS ( > 1 mm )

1959 1129 - 716

1960 711 - 712

1961 711 - 712

1962 711 - 712

711 - 716

CONVOLUTED OVIVULTS

1959 1129 - 711

1960 711 - 712

1961 711 - 712

1962 711 - 712

711 - 712

EGGS IN OVIVULTS

1959 716 - 716

1960 711 - 712

1961 711 - 712

1962 711 - 712

711 - 712

CORPORA LUTEA

1959 716

1960 711 - 712

1961 711 - 712

1962 711 - 712

711 - 712



Potential Breeders, Uta stansburiana ♂♂ (45+mm, S-V)

①

(smallest ♂ = 43 mm)  
(largest ♂ = 60 " )

Total, 1958-1961

<u>Date</u>	<u># ♂</u>	<u>No ♂</u>	<u>Total</u>	<u>% ♂</u>
Aug. '58	1	3	4	25
Sept.	0	3	3	0
Oct.	0	2	2	0
Jan. '59	3	0	3	100
Feb.			0	
Mar.	1	0	1	100
Apr.	3	0	3	100
May	3	7	10	30
June	3	0	3	100
July	4	0	4	100
Aug.	1	3	4	25
Sept.	0	6	6	0
Oct.	0	1	1	0
Jan. '60	1	0	1	100
Feb.			0	
Mar.	17	0	17	100
Apr.	16	0	16	100
May	2	0	2	100
June	1	0	1	100
July			0	
Aug.	0	1	1	0
Sept.	0	2	2	0
Oct.	0	1	1	0
Nov.			0	
Dec.	0	1	1	0
Jan. '61	5	1	6	83
Feb.	7	2	9	78
Mar.	25	0	25	100
Apr.	15	0	15	100
May	19	0	19	100

(con't.)

<u>Month</u>	<u># ♂</u>	<u>No ♂</u>	<u>Total</u>	<u>% ♂</u>
Jan.	9	1	10	90
Feb.	7	2	9	78
Mar.	43	0	43	100
Apr.	34	0	34	100
May	24	7	31	77
June	8	0	8	100
July	4	0	4	100
Aug.	2	7	9	22
Sept.	0	16	16	0
Oct.	0	4	4	0
Nov.			0	
Dec.	0	1	1	0
Total			164	



# Potential Breeders, Uta stansburiana ♂ (cont.)

2

<u>Date</u>	<u># ♂</u>	<u>No ♂</u>	<u>Total</u>	<u>% ♂</u>
June '61	4	0	4	100
July			0	
Aug.			0	
Sept.	0	5	5	0
Apr. '62	4	0	4	100%
May '62	8	1	9	89
Jun. '62	21	0	21	100%
Aug.			0	
Jan. '63	1	0	1	100
Apr.	3	0	3	100
May.	7	0	7	100
Jul.	1	0	1	100
Jan. '64	3	0	3	100
May	3	0	3	100

## Totals, 1958-1963

<u>Month</u>	<u># ♂</u>	<u>No ♂</u>	<u>Total</u>	<u>% ♂</u>
Jan	10	1	11	91
Feb	7	2	9	78
Mar	43	0	43	100
Apr.	41	0	41	100
May	39	8	47	83
Jun	29	0	29	100
Jul	5	0	5	100
Aug	2	7	9	22
Sep	0	16	16	0
Oct.	0	4	4	0
Nov			0	0
Dec	0	1	1	0
Total			215	



# Potential Breeders, *Uta stansburiana* at 7, B. Elevation

(Total 215)

Elevation (ft.)

Date	1949		1950-51		1951-52		1953-54	
	S/R	1-8	S/R	1-8	S/R	1-8	S/R	1-8
Aug. '58	2/2	0	4/2	50				
Sept.			0/3	0				
Oct.	0/2	0						
Jan. '51			3/3	100				
Mar.	2/2	100						
Apr.	1/1	100	4/2	100				
May			9/9	100	1/1	100		
June	3/3	100						
July	2/2	100	4/2	100				
Aug.			0/1	0	1/3	33		
Sept.	0/2	0	1/2	0	0/2	0		
Oct.					0/1	0		
Jan. '61	1/1	100						
Mar.	1/1	100	7/7	100	7/7	100		
Apr.	5/5	100	11/11	100				
May			4/4	100				
June			1/1	100				
Aug.	0/1	0						
Sept.	0/2	0						
Oct.	0/1	0						
Dec.	0/1	0						
Jan. '61	5/6	83						
Feb.	3/3	100	4/4	100				
Mar.	19/19	100	3/3	100	4/4	100	1/1	100
Apr.	13/13	100			4/4	100		
May			3/3	100	10/10	100		
June	3/3	100			1/1	100		
Sept.	0/5	0						





# Potential Breeders, Uta stansburiana ♀♀, By Elevation

(Total)

Elevation (ft.)

Month	0-1111		200-2112		+ 40-5777		600-1777	
	♂/T	%	♂/T	%	♂/T	%	♂/T	%
Jan.	6/7	86	3/3	100				
Feb.	3/3	100	4/6	67				
Mar.	22/22	100	10/10	100	11/11	100	1/1	100
Apr.	19/19	100	13/13	100	2/2	100		
May			14/14	100	11/17	100		
June	6/6	100	1/1	100	1/1	100		
July	2/2	100	2/2	100				
Aug.	0/3	0	1/3	33	1/3	33		
Sept.	0/9	0	0/5	0	0/2	0		
Oct.	0/3	0			0/1	0		
Nov.								
Dec.	0/1	0						



Uta stansburiana (45<sup>+</sup>mm, S-V)

Left Testis Volume - Summary - 1958-1963.

Month	$\Sigma X$	$N$	$\bar{X}$
Jan	625	10	62.5
Feb	602	9	66.9
Mar	2795	43	65.0
Apr	1813	40	45.3
May	1555	46	33.8
Jun	<del>1044</del> 1044	<del>29</del> 29	<del>35.2</del> 36.0
Jul	54	5	10.8
Aug	20	9	2.2
Sep	93	17	5.5
Oct	19	4	4.8
Nov.	<hr/>		
Dec.	35	1	35

	<u>1967</u>		
Nov.	206	9	23
Dec.	210	5	42



*Uta stansburiana* Testis Volumes (45<sup>+</sup>mm S-V)

1958  
~~Left~~ Testis

AUG SEPT OCT

2 5 5

4 5 6

1 2

2

TOTAL VOL 9 12 11

MEAN 2.3 4.0 5.5

RANGE 1-4 2-5 5-6

NO. LIZARDS 4 3 2

Right Testis

AUG SEPT OCT

3 4 6

2 5 5

2 1

2

TOTAL VOL 9 10 11

MEAN 2.3 3.3 5.5

RANGE 2-3 1-5 5-6

NO. LIZARDS 4 3 2



# Uta stansburiana Testis Volumes (45<sup>mm</sup> S-V)

1959  
Left Testis

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT
65	—	51	49	21	26	19	5	1	7
27		65	37	30	33	8	1	3	
				18	51	4	1	5	
				24		12	2	2	
				6				3	
				19				2	
				7				13	
				2					
				8					
				33					

TOTAL VOL	92	0	116	86	168	80	43	9	29	7
MEAN	46.0	0	58.0	43.0	16.8	26.7	10.8	2.3	4.1	7
RANGE	27-65	0	51-65	37-49	2-33	26-51	4-19	1-5	1-13	—
NO. LIZARDS	2	0	2	2	10	3	4	4	7	1

Right Testis

<del>65</del>	—	59	45	21	33	18	4	2	7
29		40	38	22	41	6	2	4	
				17	36	3	1	5	
				17		11	2	2	
				5				4	
				19				2	
				8				21	
				3					
				9					
				30					

TOTAL VOL	94	0	99	83	151	110	38	9	40	7
MEAN	47.0	0	49.5	41.5	15.1	36.7	9.5	2.3	5.7	7
RANGE	29-65	0	40-59	38-45	5-30	33-41	3-18	1-4	2-21	—
NO. LIZARDS	2	0	2	2	10	3	4	4	7	1





Vta stansburiana Testis Volumes (45<sup>+</sup>mm S-V)

1960  
Left Testis

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
49	—	60	26	39	4	—	2	6	1	—	35
		65	63	28				3			
		45	39								
		51	49								
		88	49								
		68	36								
		42	37								
		60	85								
		55	51								
		65	81								
		79	47								
		55	41								
		60	23								
		71	51								
		73	68								
		53	53								

TOTAL VOL	49	0	990	799	67	4	0	2	9	1	0	35
MEAN	49	0	61.9	49.9	33.5	4	0	2	4.5	1	0	35
RANGE	—	0	42-88	23-85	28-39	—	0	—	3-6	—	0	—
NO. LIZARDS	1	0	16	16	2	1	0	1	2	1	0	1



Uta stansburiana Testis Volumes (45<sup>+</sup>mm S-V)

1960  
Right Testis

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
51	-	57	82	38	3	-	3	8	2	-	53
		44	57	22				3			
		51	67								
		36	57								
		85	40								
		73	48								
		55	31								
		45	69								
		64	51								
		47	90								
		63	55								
		76	39								
		82	36								
		57	65								
		61	55								
		51	73								

TOTAL VOL	51	0	947	915	60	3	0	3	11	2	0	53
MEAN	5	0	59.2	57.2	30.0	3	0	3	5.5	2	0	53
RANGE	-	0	36-85	31-82	22-38	-	0	-	3-8	-	0	-
NR LIZARDS	1	0	16	16	2	1	0	1	2	1	0	1



# *Vta stansburiana* Testis Volumes (45<sup>+</sup>mm S-V)

1961  
~~Left~~ Testis

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT
60	20	58	5	24	8	-	-	2
68	92	67	45	37	38			10
42	65	79	55	23	10			20
128	94	82	51	19	24			1
65	85	102	41	49				10
71	4	78	41	42				
	48	53	37	55				
	92	46	42	35				
	102	42	30	68				
		78	60	73				
		63	48	30				
		55	33	49				
		71	60	53				
		76	41	55				
		63	46	63				
		73		51				
		68		53				
		73		23				
		68		41				
		71		30				
		55						
		85						
		35						
		53						
		95						

TOTAL VOL	434	602	1689	635	873	80	0	0	43
MEAN	72.3	66.9	67.6	42.3	43.7	20.0	0	0	8.6
RANGE	42-128	4-102	35-102	5-60	19-73	8-38	0	0	1-20
NO. LIZARDS	6	9	25	15	20	4	0	0	5



*Uta stansburiana* Testis Volumes (45 mm S-V)

1961  
Right Testis

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT
42	22	60	5	20	10	—	—	2
52	81	81	53	35	45			11
<del>52</del>	73	79	65	21	7			19
<del>47</del>	78	68	39	20	24			1
46	95	79	44	51				10
52	4	79	38	51				
	48	49	41	63				
	85	53	46	33				
	79	53	18	85				
		76	55	58				
		50	49	20				
		66	46	35				
		67	53	53				
		65	28	47				
		53	45	65				
		81		51				
		53		53				
		65		20				
		68		49				
		65		26				
		53						
		68						
		40						
		48						
		82						

TOTAL VOL	301	565	1601	625	856	86	0	0	43
MEAN	50.2	62.8	64.0	41.7	42.8	<del>45</del>	0	0	8.6
RANGE	42-57	4-95	40-82	5-65	20-85	7-45	0	0	1-19
NO. LIZARDS	6	9	25	15	20	4	0	0	5





# Uta stansburiana Testis Volumes (45 mm SVL)

1962  
Left Testis

APR	MAY	JUN	<del>JUL</del>
33	33	53	-
46	53	45	
51	9	60	
28	55	49	
	36	45	
	42	60	
	42	28	
	30	37	
	47	49	
		47	
		47	
		51	
		23	
		38	
		33	
		15	
		51	
		32	
		47	
		39	
		33	

TOTAL VOL 158 347 882

MEAN 39.5 38.6 42.0

RANGE 28-51 9-55 15-60

NO. LIZARDS 4 9 21



Uta stansburiana Testis Volumes (45 Tarran S-V)

1962  
Right Testis

APR	MAY	JUN
47	84	51
53	60	47
65	5	60
36	66	51
	51	46
	47	53
	38	45
	27	44
	34	42
		53
		43
		53
		32
		48
		33
		15
		53
		33
		53
		30
		33

TOTAL VOL 201 412 918  
MEAN 50.3 45.8 43.7  
RANGE 36-65 5-84 15-60  
NO. LIZARDS 4 9 21



Uta stansburiana - Testis volumes - (45<sup>+</sup>mm - S-V)

1963

Left Testis

Jan	Apr	May	Jul.
50	35	15	11
	18	15	
	82	20	
		18	
		32	

$\Sigma X$

$N$

$\bar{X}$

range

Right Testis

Jan	Apr	May	Jul.
51	42	13	13
	20	23	
	63	20	
		20	
		32	

$\Sigma X$

$N$

$\bar{X}$

range-



# Testis Volumes, *Uta stansburiana* Adults (45+mm S-U)

Left testis larger

|||||

|||||

Right testis larger

|||||

|||||

Testes same size

|||||





# Testis Volumes, *Uta stansburiana* Immature (< 45 mm - 1)

Left testis larger

||||

Right testis larger

||||

Testes same size

|||



Uta stansburiana Adults (45+ mm S-V)

(15)

Left testis anterior

(16)

Right testis anterior

|||||

(17)

Testes even



Uta stansburiana Immature (< 45 mm S-V)

(15)

Left testis anterior

(16)

Right testis anterior

||||

(17)

Testes even



Uta stansburiana Adult ♂ (45+ mm SVL)

B

B1

B2

B3

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec

|||

~~||||~~

|||

|||

~~||||~~

~~||~~

|||

~~||||~~

-





Uta stansburiana Immature ♂

B

B1

B2

B3

Jan

Feb

Mar

Apr

May

Jun

Jul

Aug

Sep

Oct

Nov

Dec



Uta stansburiana Adult ♀ (43+mm. S-V)

(19) LEFT OVARY ANTERIOR	(18) RIGHT OVARY ANTERIOR	(20) OVARIES EVEN



Uta stansburiana

EGGS IN OVIDUCT

LEFT

RIGHT

NO. of EGGS	0	1	2	3	4	5	6	7	8	9	10		0	1	2	3	4	5	6	7	8	9	10	
NO. of TAG																								
77	✓															✓								
110			✓													✓								
134			✓														✓							
157		✓														✓								
201				✓													✓							
212			✓													✓								
214			✓													✓								
251		✓															✓							
254		✓														✓								
266		✓														✓								
267			✓													✓								
268	✓																✓							
275			✓													✓								
276			✓														✓							
280			✓													✓								
281			✓											✓										
282			✓												✓									
283			✓												✓									
285			✓												✓									
293		✓													✓									
295			✓												✓									
305			✓												✓									
306			✓												✓									
310				✓													✓							
322			✓													✓								
323			✓													✓								
331			✓														✓							
334					✓											✓								
335			✓													✓								



Uta stansburiana

EGGS IN OVIDUCT

LEFT

RIGHT

NO. of EGGS	0	1	2	3	4	5	6	7	8	9	10		0	1	2	3	4	5	6	7	8	9	10
-------------	---	---	---	---	---	---	---	---	---	---	----	--	---	---	---	---	---	---	---	---	---	---	----

NO. of TAG

336

✓

337

✓

344

✓

347

✓

355

✓

356

✓

362

✓

363

✓

388

✓

392

✓

✓

✓

✓

✓

✓

✓

✓

✓

✓

✓





Uta stansburiana

## SIZE OF EGGS IN OVIDUCT

LEFT

RIGHT

LIZARD NO.

SIZE IN mm.

77

110 10.2 x 7.4 11.0 x 7.2

134 10.5 x 6.2 10.2 x 7.4

157 10.0 x 6.3

201 8.9 x 6.0 10.8 x 6.3 9.0 x 6.0

212 12.2 x 7.1 12.9 x 6.9

214 11.0 x 7.4 11.1 x 7.8

251 9.0 x 5.7

254 12.5 x 7.5

266 12.5 x 7.2

267 11.1 x 6.6 10.7 x 7.1

268

275 10.5 x 7.7 11.1 x 8.7

276 10.8 x 6.3 10.5 x 6.8

280 12.0 x 7.5 11.6 x 7.7

281 12.5 x 7.5 12.9 x 7.5

282 11.1 x 7.1 11.0 x 7.2

283 11.3 x 7.4 12.3 x 6.8

285 12.8 x 7.2 12.8 x 7.8

293 11.7 x 6.8

295 11.3 x 7.1 11.6 x 6.8

305 10.8 x 6.8 10.7 x 6.8

306 10.7 x 6.3 11.4 x 6.5

310 no measurements

322 9.0 x 6.2 6.8 x 5.3

323 11.0 x 6.2 12.0 x 6.0

331 10.4 x 7.1 10.1 x 7.2

334 9.8 x 7.2 9.8 x 7.2 9.8 x 7.1 9.0 x 7.4

335 11.4 x 7.1 12.0 x 6.9

336 12.0 x 6.9

SIZE IN mm.

12.6 x 8.1 11.0 x 7.7

14.0 x 7.5 11.3 x 6.8

10.7 x 6.8 9.6 x 6.9 9.5 x 6.3

11.3 x 6.8 10.4 x 6.6

11.3 x 6.0 10.1 x 6.8 9.8 x 6.5

12.9 x 7.1 12.3 x 7.2

11.0 x 7.8 10.7 x 7.4

8.6 x 6.0 7.5 x 7.5 9.0 x 6.5

10.1 x 7.5 10.5 x 7.5

11.4 x 7.5 12.2 x 7.8

12.0 x 7.2 10.7 x 6.9

10.5 x 7.2 10.5 x 7.4 11.3 x 7.5 9.9 x 7.5

11.7 x 7.2 12.0 x 7.2

10.5 x 7.1 10.4 x 6.9 10.8 x 6.6

12.2 x 7.1 12.0 x 7.4

14.0 x 6.8

10.7 x 7.2 11.0 x 7.1

11.9 x 6.8 11.6 x 7.1

12.0 x 8.0 12.5 x 8.0

9.5 x 7.1 11.4 x 7.1

11.3 x 6.2 11.3 x 6.5

11.4 x 6.8 11.1 x 6.2

11.7 x 7.1 11.6 x 6.8

no measurements

9.9 x 6.8 8.3 x 6.3 7.8 x 6.5

9.0 x 5.3 10.5 x 6.0 11.7 x 6.0

10.4 x 7.4 9.9 x 7.2 10.2 x 6.8 10.4 x 7.2

11.0 x 7.2 12.2 x 7.2

11.3 x 7.2 11.0 x 6.9

11.4 x 7.1 11.7 x 7.1



Uta stansburiana

## SIZE OF EGGS IN OVIDUCT

LEFT

RIGHT

LIZARD NO.

SIZE IN mm

337 10.8 x 7.4 11.3 x 6.6

344 10.1 x 6.6 11.4 x 6.3

347 10.8 x 7.2 11.7 x 7.8

355 12.5 x 7.7 11.4 x 7.5

356 11.9 x 7.7 10.8 x 7.4 11.1 x 6.8

362 10.8 x 7.1 10.7 x 6.8

363 11.4 x 7.5 12.2 x 8.0

388 11.1 x 6.8 10.5 x 6.9

392 10.5 x 7.2 9.8 x 7.2

 $N = 19$  $\bar{X} = 11.1 \times 7.2 \text{ mm}$ ~~Range =~~ $\Sigma X = 210.8 \times 136.5$ 

SIZE IN mm

12.0 x 7.2 11.4 x 7.7

10.7 x 7.4 10.8 x 7.5

11.7 x 7.5 11.3 x 7.8

12.9 x 6.9

11.7 x 6.6

11.3 x 7.2 10.7 x 6.9

11.0 x 7.2 11.9 x 7.2

10.4 x 7.5 11.3 x 6.8 11.3 x 7.4

11.4 x 6.3 11.1 x 6.8

 $N = 17$  $\bar{X} = 11.3 \times 7.2 \text{ mm}$ ~~Range =~~ $N = 36$  $\Sigma X = 192.9 \times 121.9$  $\bar{X} = 11.2 \times 7.2 \text{ mm}$ 

Range = 9.8 x 6.3 mm to 12.9 x 8.0 mm

 $\Sigma X = 403.1 \times 258.4$



Uta stansburiana

OVA WITH YOLK

LEFT OVARY

RIGHT OVARY

NUMBER OF OVA

1 ~~||||~~ |||

~~||||~~

2 ~~||||~~ ~~||||~~ ~~||||~~ |||

~~||||~~ ~~||||~~ ~~||||~~ |||

3 ~~||||~~ |||

~~||||~~ |||

4

||

5

6

7

8

9

10 |

|



Uta stansburiana  
FAT BODIES

MONTH	ADULT		IMMATURE	
	♂ (45+mm.)	♀ (43+mm.)	♂	♀
JAN. <del>14</del> 14				
FEB. 1				
MAR. 1 21	<del>    </del>			/
APR. 11 22	<del>    </del>		/	
MAY <del>11</del> 5	21			
JUN. <del>11</del> 2				
JUL. 1 5				
AUG.     15				
SEPT. <del>    </del> 2				//
OCT. 1 7				/
NOV.				
DEC. 1				





Uta stansburiana Adult (43+ mm S-V)

No.	Left ovary	Right ovary
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11	1	1
12	1	1
13	1	1
14	1	1
15	1	1



Uta stansburiana Immature

No.	Left ovary	Right ovary
1		
2		
3		
4		
5	II	
6	III	IIII
7	IIII	II
8	III	IIII
9		I
10		
11	I	
12		I
13		
14		I
15		



Uta stansburiana Adult ♀ (43+ mm S-V)

B	B1	B2	B3
Jan			
Feb			
Mar			
Apr 1	III	III	
May 11	III	III	
Jun	I	III	I
Jul 1		I	
Aug 11			
Sep			
Oct			
Nov			
Dec			



Uta stansburiana Immature ♀

B

B1

B2

B3

Jan  
Feb  
Mar  
Apr  
May  
Jun  
Jul  
Aug  
Sep  
Oct  
Nov  
Dec





Codes, etc.

Codes, etc.

# Reproductive Data to be Tabulated and summarized -

D

♂♂ -

1. No. ♂ autopsied each month - ad & imm.
2. No. molting - ad & imm.
3. Time of molt
4. No. ♂ with right testis anterior
5. " " " left " " } ad & imm
6. " " " testes even
7. No. with right testis larger
8. " " " left " " } ad & imm
9. " " " testes same volume -
10. No. ♂ with no post-anal scales
11. Time when vas deferens & epididymis highly convoluted
12. " of enlarged testes ( / mm<sup>3</sup> )
13. Breeding obs (B, 1, 2, 3) - ad & imm
14. Testis volume vs. S-V length of small adults compared to large adults at beginning & middle of breeding season
15. Rainfall vs. testis volumes & potential breeding (plotted)
16. S-V length of largest & smallest ♂♂ dissected

~~[adults 80+mm S-V (Uma)]~~



Reproductive Data to be Tabulated and Summarized

ff

1. Breeding colors (B, 1, 2, 3) - ad. & imm.
2. No. eggs / ♀ laid
3. Size of laid eggs (oviducal)
4. No. ov in left ovary accumulating yolk
5. No. " " right " "
6. White spots in ov
7. No. ♀ accumulating yolk in eggs
8. Adult ♀ molting
9. Imm. ♀ " }
10. Oviducal egg size - each oviduct
11. No. eggs in each oviduct
12. No. eggs in each ovary - adult
13. No. corpora lutea in each ovary i.e. eggs in oviducts
14. No. eggs in each ovary - immature
15. Time of: yolk accumulation, enlarged eggs in ovary, eggs in oviduct, corpora lutea in ovaries
16. Size of smallest ♀ with enlarged ovarian eggs
17. " " " " " completed oviducts
18. " " " " " eggs accumulating yolk
19. No. times corpora lutea present per oviducal egg
20. " " no. " " " no. oviducal eggs
21. No. with enlarged post- and - oviducts
22. No. & time fat bodies present
23. No. ♀ with left ovary anterior
24. " " " right " "
25. " " " ovaries even
26. No. & % of ff with eggs in oviducts each year
27. No. ♀ autopsied each month - ad. & imm.
28. No. enlarged eggs in each ovary

adults  
70+ imm  
S-V



29. No. times left any ~~and/or~~ ~~adult~~ contained
30. " " ~~right~~ " " " " " " " "
31. " " ~~as. same~~
32.  $\bar{X}$  diam. of largest  $\phi$  in  $\phi$  of sea mouth or sea gate +  $\phi$  ~~and~~
33.  $\bar{X}$  " " " " " ~~adult~~ " " " " " "
34. Plot rainfall (winter) vs. #  $\phi$  with visible eggs + enlarged eggs.
35. S-U length of largest + smallest  $\phi\phi$  dissected





## Testes Biology (From Sex & Internal Secretions) (C.R. Moore)

Testicular activity has been described in several species of reptiles by such investigators as:

Daleq, A. 1920. Le cycle saisonnier du testicule de l'orvet.  
C.R. Soc. Biol., 83: 820

Reiss, P. 1923a. Sur les caractères sexuels secondaires chez le lézard mâle. Compte Rend. Soc. Biol., 88: 445

——— 1923b. Le cycle testiculaire du lézard. C.R. Soc. Biol. 88: 447.

Franckenberger, Z. 1922. Zur frage der funktionellen Bedeutung der Hodenzwischenzellen. Anat. Anz., 55: 545.

Courrier, R. <sup>1929.</sup> Les modifications saisonnières de l'appareil uro-génital chez Uromastix acanthinurus (Bell). Arch. d'Anat. Mic., 25: 388

Blount, R.F. 1929. Seasonal cycles of the interstitial cells in the testis of the horned toad (Phrynosoma solaris); seasonal variation in the number and morphology of the interstitial cells and the volume of the interstitial tissue. Jour. Morph. & Physiol., 48: 317

(Testes of minimum size during hibernation, slowly increased in size after hibernation, & in May a sudden increase in size to a maximum at the mating period of June & July; from July to November there was a gradual reduction in size. The average maximal volume of testis was 7X the average minimal volume. Shedding of spermatozoa led to a collapse of the tubules & great testicular reduction.)

Herlant, M. 1933. Recherches histologiques et experimentales sur les variations cycliques du testicule et des caractères sexuels secondaires chez les reptiles. Arch. de Biol., 44: 347

(Worked on Lacerta muralis & Anguis fragilis in Mediterranean area. Spermatozoa shed in May, followed immediately by a renewal of the spermatogenetic cycle. Spermatogonial activity occurs in May-June & produces the spermatocyte as the characteristic cell of August. Maturation divisions are prominent in February-March & spermatozoa occur in April.)

Regamey, J. 1935. Les caractères sexuels du lézard (Lacerta agilis L.). Rev. suisse de Zool., 42:87

Matthey, R. 1929. Caractères sexuels secondaires du lézard male. Bull. Soc. vend. Sc. nat., 57:71

Takewaki, K., & S. Fukuda. 1935. Effects of gonadectomy and testicular transplantation on the kidney and epididymis of a lizard, Takydromus tachydromoides. Jour. Fac. Sc. Tokyo Imper. Univ., 4: 63

(transplants)

Minimum S-V Lengths Considered as Adult (mm)

<u>Species</u>	<u>♂</u>	<u>♀</u>
Callisaurus	70	65
P. m'calli	63	63
P. platyrhinos	65	65
Coleonyx	55	55
Dipsosaurus	115	110
Uma	80	70
S. graciosus	55	50
S. magister	85	75
S. occidentalis	65	60
Urosaurus grac.	45	45
Uta stans.	45	43
Sauromalus	170	120
Cnemid. tigris	80	70
Crotaph. wislizeni	90	90
(S. orcutti	90	85 )



4 Sept 8 - 12, 1970 - 1970

		x	range	
<i>Callisaurus draconoides</i>	♂	81.7	55.5 - 106	2.1
	♀	72.1	47.5 - 100	
<i>Enemidophorus tigris</i>	♂	90.0	50 - 140	1.0
	♀	78.7	40 - 110	.8
<i>Coleonyx variegatus</i>	♂	67.1	30 - 91	.75
	♀	70.0	30 - 94	1.1
<i>Erotophytus ciliatus</i>	♂	67.8	20 - 110	2.1
	♀	47.6	10 - 80	.5
<i>Dipsosaurus dorsalis</i>	♂	126.7	100 - 175	3.1
	♀	119.1	70 - 131	1.1
<i>Phrynosoma mitchelli</i>	♂	111.0	50 - 150	.5
	♀	79.7	30 - 97	1.6
<i>Phrynosoma posternus</i>	♂	111.0	50 - 150	1.0
	♀	87.0	40 - 110	.7
<i>Saururus crotchi</i>	♂	176.8	70 - 250	1.0
	♀	152.0	100 - 200	.8
<i>Sceloporus gramineus</i>	♂	116.0	50 - 160	1.3
	♀	107.0	50 - 160	1.0
<i>Sceloporus magister</i>	♂	107.7	50 - 150	.8
	♀	91.0	40 - 110	.7
<i>Sceloporus occidentalis</i>	♂	146.5	60 - 200	3.1
	♀	76.1	40 - 100	1.0
<i>Sceloporus undulatus</i>	♂	100.0	40 - 150	.7
	♀	74.0	30 - 100	.7
<i>Urosaurus gramineus</i>	♂	100.0	50 - 150	.8
	♀	83.0	40 - 120	1.0
<i>Uta stansburiana</i>	♂	107.0	50 - 160	1.0
	♀	80.0	40 - 120	1.0



✓ ✓ ✓

10

1 1 1 1

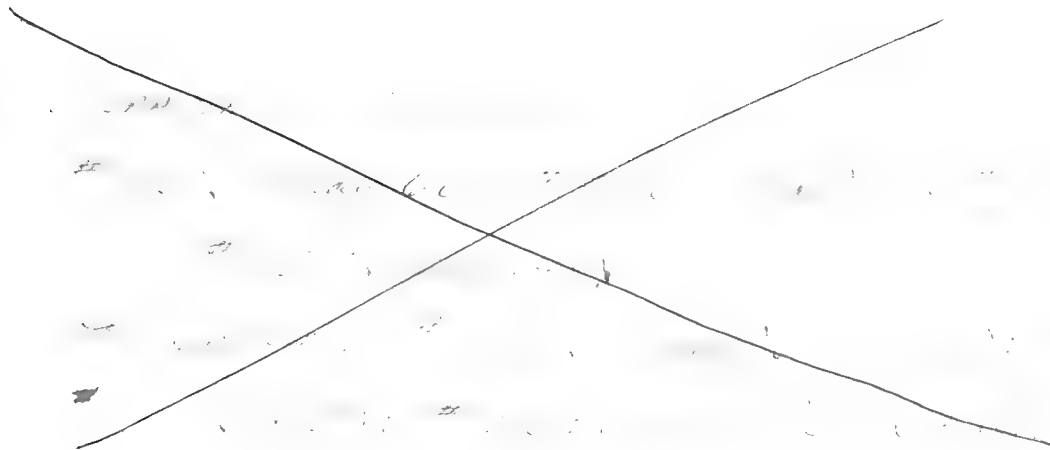
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*Nov*







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ENLARGED POST-ANAL SCALES  
IN ♀

SPECIES	NUMBER OF LIZARD
<u>Callisaurus draconoides</u>	10
TOTAL # 7	
<u>Sceloporus magister</u>	8
TOTAL # 8	
<u>Uma inornata</u>	6
TOTAL # 6	
<u>Uma notata</u>	15 726
TOTAL # 2	
<u>Uma scoparia</u>	2
TOTAL # 10	
<u>Xrosaurus graciosus</u>	5
TOTAL # 28	15 12 15 11 8 2 2 2-3 2-4 3-2



Lizards Collected, 1958  
(No. dissected)

<u>Species</u>	<u>No. ♂</u>	<u>No. ♀</u>	<u>Total</u>
Callisaurus draconoides	6	6	12
Cnemidophorus tigris	2	2	4
Coleonyx variegatus	0	8	8
Crotaphytus collaris	1	1	2
Crotaphytus wislizeni	1	2	3
Dipsosaurus dorsalis	5	5	10
Gerrhonotus multicarinatus	0	1	1
Phrynosoma platyrhinos	2	0	2
Sceloporus graciosus	8	12	20
Sceloporus magister	2	2	4
Sceloporus occidentalis	17	14	31
Sceloporus orcutti	9	6	15
Uma inornata	11	20	31
Uma notata	18	11	29
Urosaurus graciosa	5	1	6
Uta stansburiana	<u>21</u>	<u>10</u>	<u>31</u>
Totals (16 species)	108	101	209



Lizards Collected, 1959

(No. dissected)

<u>Species</u>	<u>No. ♂</u>	<u>No. ♀</u>	<u>Total</u>
Callisaurus draconoides	26	21	47
Cnemidophorus tigris	7	4	11
Coleonyx variegatus	40	32	72
Crotaphytus collaris	5	3	8
Crotaphytus wislizeni	8	8	16
Dipsosaurus dorsalis	56	24	80
Gerrhonotus multicarinatus	2	0	2
Phrynosoma coronatum	2	4	6
Phrynosoma m'calli	6	4	10
Phrynosoma platyrhinos	10	4	14
Sauromalus obesus	7	5	12
Sceloporus graciosus	39	22	61
Sceloporus magister	51	46	97
Sceloporus occidentalis	146	93	239
Sceloporus orcutti	48	28	76
Uma inornata	67	69	136
Uma notata	103	91	194
Uma scoparia	106	78	184
Urosaurus graciola	38	19	57
Uta stansburiana	48	24	72
Totals (20 species)	815	579	1,394

{ 926 were in the 6 species of Sceloporus and Uma.  
 { 469 were in the remaining genera.





Lizards Collected, 1960  
(No. dissected)

<u>Species</u>	<u>No. ♂</u>	<u>No. ♀</u>	<u>Total</u>
Callisaurus draconoides	43	29	72
Cnemidophorus tigris	16	13	29
Coleonyx variegatus	48	45	93
Crotaphytus collaris	8	6	14
Crotaphytus wislizeni	11	10	21
Dipsosaurus dorsalis	173	104	277
Gerrhonotus multicarinatus	3	0	3
Phrynosoma coronatum	0	5	5
Phrynosoma m'calli	8	16	24
Phrynosoma platyrhinos	30	5	35
Sauromalus obesus	18	7	25
Sceloporus graciosus	9	13	22
Sceloporus magister	13	7	20
Sceloporus occidentalis	36	22	58
Sceloporus orcutti	6	7	13
Uma inornata	63	68	131
Uma notata	122	94	216
Uma scoparia	75	76	151
Urosaurus graciosa	44	43	87
Uta stansburiana	41	24	65
Totals (20 species)	766	594	1,360

Live Lizards on Hand (Nov. 15, 1960)

<u>Species</u>	<u>No. adults</u>	<u>No. juvenals</u>	<u>Species</u>	<u>No. adults</u>	<u>No. juvenals</u>
Dipsosaurus dorsalis	1	1	Uma notata	18	14
Gerrhonotus multicar.	0	1	Uma scoparia	8	14
Phrynosoma m'calli	0	10	Urosaurus graciosa	0	2
Sceloporus occidentalis	0	18	Totals	45	56
Sceloporus orcutti	0	1			73
Uma inornata	18	12			



Lizards Collected, 1961  
(No. dissected)

<u>Species</u>	<u>No. ♂</u>	<u>No. ♀</u>	<u>Total</u>
Callisaurus draconoides	16	16	32
Cnemidophorus hyperythrus	20	18	38
Cnemidophorus tigris	11	3	14
<b>Coleonyx</b> variegatus	59	42	101
Crotaphytus collaris	1	4	5
Crotaphytus wislizeni	5	11	16
Dipsosaurus dorsalis	115	57	172
Gerrhonotus multicarinatus	7	2	9
Phrynosoma coronatum	0	1	1
Phrynosoma m'calli	46	56	102
Phrynosoma platyrhinos	5	3	8
Sauromalus obesus	7	4	11
Sceloporus graciosus	35	23	58
Sceloporus magister	4	1	5
Sceloporus occidentalis	96	66	162
Sceloporus orcutti	67	38	105
Uma inornata	52	57	109
Uma notata	99	73	172
Uma scoparia	61	58	119
Urosaurus graciosus	61	49	110
Uta mearnsi	2	1	3
Uta ornata	6	2	8
Uta stansburiana	84	50	134
Xantusia henshawi	13	14	27
Totals (24 species)	872	649	1,521



Lizards Collected, 1962

(No. Dissected)

<u>Species</u>	<u>No. ♂</u>	<u>No. ♀</u>	<u>Total</u>
<i>Callisaurus draconoides</i>	30	22	52
<i>Cnemidophorus hyperythrus</i>	2	0	2
<i>Cnemidophorus tigris</i>	22	19	41
<i>Coleonyx variegatus</i>	22	19	41
<i>Crotaphytus collaris</i>	6	2	8
<i>Crotaphytus wislizeni</i>	18	15	33
<i>Dipsosaurus dorsalis</i>	96	56	152
<i>Gerrhonotus multicarinatus</i>	6	0	6
<i>Phrynosoma coronatum</i>	2	0	2
<i>Phrynosoma m'calli</i>	33	36	69
<i>Phrynosoma platyrhinos</i>	8	4	12
<i>Sauromalus obesus</i>	8	3	11
<i>Sceloporus graciosus</i>	84	73	157
<i>Sceloporus magister</i>	47	29	76
<i>Sceloporus occidentalis</i>	75	31	106
<i>Sceloporus orcutti</i>	4	3	7
<i>Uma inornata</i>	41	31	72
<i>Uma notata</i>	55	51	106
<i>Uma scoparia</i>	64	55	119
<i>Urosaurus graciosus</i>	56	61	117
<i>Uta ornata</i>	2	0	2
<i>Uta stansburiana</i>	36	31	67
<i>Xantusia henshawi</i>	4	6	10
Totals (23 species)	<u>721</u>	<u>547</u>	<u>1,268</u>



# Lizards Dissected, 1958-1962

<u>Species</u>	<u>No. ♂</u>	<u>No. ♀</u>	<u>Total</u>
Callisaurus draconoides	121	94	
Cnemidophorus hyperythrus	22	18	40
Cnemidophorus tigris	58	41	99
Coleonyx variegatus	169	146	
Crotaphytus collaris	21	16	37
Crotaphytus wislizeni	43	46	89
Dipsosaurus dorsalis	445	246	
Gerrhonotus multicarinatus	18	3	21
Phrynosoma coronatum	4	10	14
Phrynosoma m'calli	92	112	
Phrynosoma platyrhinos	55	16	71
Sauromalus obesus	40	19	59
Sceloporus graciosus	175	143	318
Sceloporus magister	117	85	
Sceloporus occidentalis	370	226	
Sceloporus orcutti	134	82	
Uma inornata	234	245	479
Uma notata	397	320	
Uma scoparia	306	267	
Urosaurus graciosus	204	173	
Uta mearnsi	2	1	3
Uta ornata	8	2	10
Uta stansburiana	230	139	
Xantusia henshawi	17	20	37
Totals (24 species)			5,780





Lizards Collected, 1963

(No. Dissected)

<u>Species</u>	<u>No. ♂</u>	<u>No. ♀</u>	<u>Total</u>
Callisaurus	11	10	21
Cnemid. hyperythrus	2	2	4
" tigris	9	8	17
Coleonyx	20	14	34
Crotaphytus wislizeni	4	8	12
Dipsosaurus	7	5	12
Gerrhonotus	2	—	2
Phrynosoma coronatum	2	—	2
" m'calli	5	6	11
" platyrhinos	6	1	7
Sauromalus	4	1	5
Sceloporus graciosus	135	87	222
" magister	1	—	1
" occident.	18	14	32
Uma scoparia	1	1	2
Urosaurus	15	17	32
Uta stans.	14	7	21

Total for 1963 = 437

Total (1958-1963) = 6217



**R-371**

**STEEL BACKPLATE**

**S. E. & M. VERNON, INC.**

**U. S. A.**



